

What do we know about poverty, inequality and health in South Africa and what are the health system reform implications? An overview of recent research

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Introduction

This paper will present a synthesis of key findings in relation to poverty, inequality and health (both health status and health systems) and their policy implications, drawing on a wide range of research undertaken by the authors over the past few years. Methodological details of this research are not provided in this paper, as it is envisaged as an overview paper that summarises key research findings and highlights their policy implications, but full references are provided so that readers can access information on the methods used in different research projects.

The paper initially explores the inter-relationship of poverty and income inequality on the one hand and health on the other, within the South African context. While it is important to address the social determinants of health (many of which involve interventions that fall outside of the health sector), the health system has a key role to play in improving as well as reducing inequalities in health status among South Africans. We, therefore, also assess equity in the current health system, both in relation to health care financing and benefits from the use of health care. This is followed by a consideration of proposals to introduce a universal health system in South Africa, to assess whether they will promote equity in the health system (and contribute to poverty and income inequality reduction), whether such a system is affordable, and the mechanisms through which this can be achieved. Finally, specific recommendations arising from our range of research are presented.

Inter-relationship between poverty and ill-health

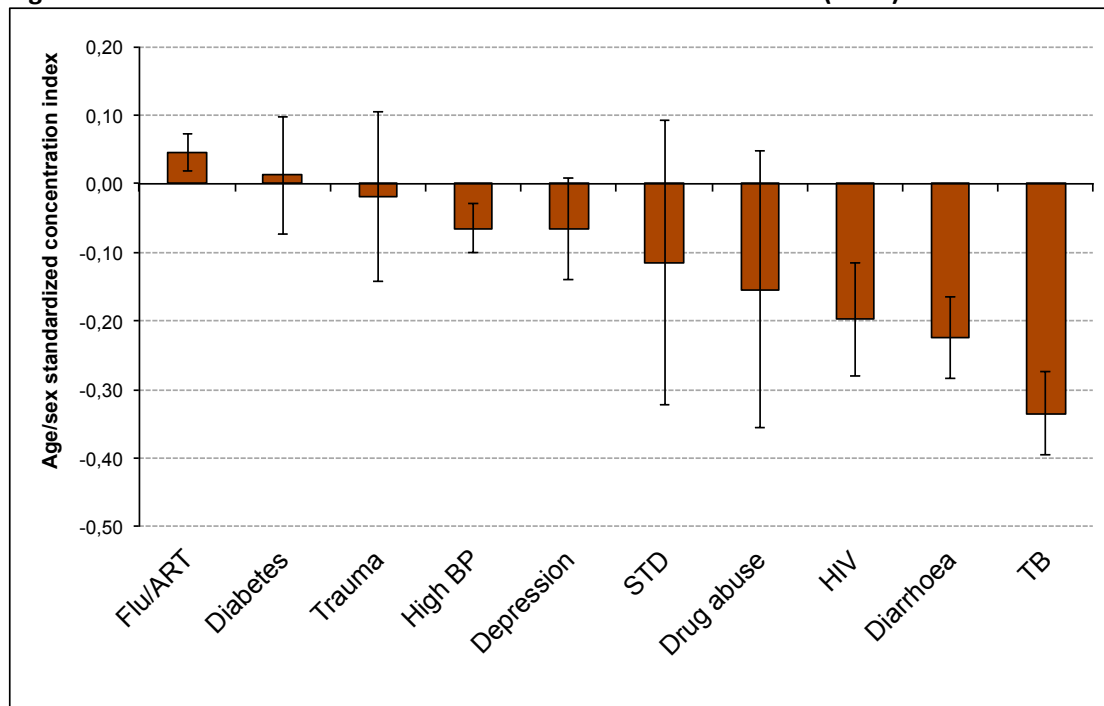
Impact of poverty and income inequality on health

Internationally, it has been recognised that poverty and low income levels significantly contribute to ill-health (Wagstaff 2002). There is a link between broadly defined socio-economic status and health, and access to social services and health (Mackenbach 1992, Ross and Wu 1995, Deaton 2002, Mackenbach *et al.* 2008). However, the link between income inequality and health (or health outcomes) remains disputed (Coburn 2000, Deaton 2003, Macinko *et al.* 2003, Wilkinson and Pickett 2006) with mixed evidence. However, Wilkinson and Pickett (2006) reviewing 168 analyses note that though some of the relationships between income inequality and health were not statistically significant, a significant proportion support the inverse relationship between income inequality and health.

In the case of South Africa, health inequalities are not only influenced by the high level of income inequality, they are inextricably linked to existing power structures and history (Ataguba and Alaba, forthcoming). Our research documents the extent of health inequities in South Africa; Figure 1 shows that there are considerably higher levels of illness amongst lower than higher socio-economic groups; a negative concentration index indicates that the

burden of ill-health is greater on the poor while a positive concentration index indicates that the rich bear a greater burden of ill-health. This is the case not only in relation to communicable diseases (such as tuberculosis and diarrhoea) but also in terms of chronic illness (such as hypertension). This is important to note as it is frequently assumed that higher income groups bear a far greater burden of chronic (or non-communicable) disease. In the South African context, the burden of some chronic conditions (such as diabetes) is evenly distributed across socio-economic groups, while others (such as high blood pressure/hypertension) are already impacting more on low- than high-income groups.

Figure 1: Standardised illness concentration indices in South Africa (2008)



Source: Ataguba et al. (2011) (Flu/ART refers to acute respiratory tract infections here)

While the causes of ill-health presented in Figure 1 is not comprehensive, these conditions account for nearly 60% of all years of life lost in South Africa (Bradshaw *et al.* 2006). It is important to note that the data presented in Figure 1 is likely to underestimate the burden of illness on poorer groups relative to richer groups. This is because these data are drawn from the General Household Survey, which records self-reported illness. However, for most of these conditions (e.g. HIV, STDs, TB, diabetes and hypertension), diagnosis at a health facility is the basis for the knowledge of the presence of the condition. This self-reporting, aided by facility-based diagnosis, may result in an underestimation among the poor because of their relatively low uptake and use of health services and therefore greater likelihood of suffering from undiagnosed illness.

Within this context, there is very strong evidence of a substantial social gradient in the distribution of illness in South Africa, with the poor bearing by far the greatest burden in most of the major causes of ill-health.

Impact of ill-health on poverty

While it has long been recognised that poverty is a key social determinant of ill-health, the extent to which ill-health can impoverish households (through loss of income and the burden of direct costs of using health care) has only received attention more recently. There has been considerable research in the past decade that has highlighted the plight of

vulnerable households who are pulled below the poverty line through having to make out-of-pocket payments for health services (Wagstaff & van Doorslaer 2003; Limwattananon *et al.* 2007). The World Health Organisation (2010) estimates that over 100 million are impoverished due to health service spending every year. Millions of other households, who are not pulled below the poverty line, face catastrophic levels of health spending. The most commonly used thresholds for assessing catastrophic health care expenditure are spending on health care that exceeds 10% of total household expenditure or 40% of non-food household expenditure. This level of costs is regarded as catastrophic as it may require households to reduce spending on other basic items such as food and education, which may have serious consequences for household members.

When assessing impoverishment and catastrophic spending across the entire population, South Africa has relatively low levels of impoverishment compared to many other low- and middle-income countries (Ataguba and Goudge, *In press*). However, this considers only spending on health services (rather than all direct costs associated with using health services) and reflects the average across those who have used health services and those who have not. In many ways, it is more appropriate to consider the impact of all direct costs associated with using health services for those who have been in need of health care.

This has been explored through research we have undertaken in two urban and two rural sites, around the cost burden of health service use for three tracer health services: obstetric care, tuberculosis (TB) treatment and antiretroviral treatment (ART) for HIV-positive people. These tracers are of particular importance given that TB and HIV account for a large share of the burden of ill-health in South Africa and that, as shown in Figure 1, they impact most heavily on the lowest socio-economic groups. In addition, treatment for TB requires frequent service use over a period of 6-9 months (or longer in the case of drug resistant TB) while ART also requires frequent health service use but is lifelong. In contrast, pregnancy-related obstetric care involves infrequent service use, but is required by many households. Importantly, all of these services should be provided at public sector facilities without any user fees being charged, i.e. they are commonly regarded as being 'free' health services.

Our research found that pregnant women were still being charged fees (a registration fee) at public facilities in one province, despite the 'free care for pregnant women and children under six years of age' policy. For all tracers, a range of other direct costs was being incurred including the cost of transport to the health facility, spending on other health services and on self-treatment. The mean direct monthly costs for TB patients were R100, R81 for patients on ART and the total direct cost for pregnant women was R321 (Cleary *et al.* forthcoming). While these amounts may appear to be 'small', they are in fact considerable relative to household's ability-to-pay. For example, direct costs exceeded 10% of total household expenditure in two-thirds of households using obstetric services, in one-third of households with a member receiving TB treatment and in 23% of households with a member on ART. The likelihood of incurring catastrophic health care costs was far greater in rural areas; for example, over 80% of households using obstetric care in the two rural sites incurred catastrophic health care costs (Cleary *et al.* forthcoming). Households were reliant on financial support from family, friends and other social networks to cover these costs, but 20% of households had to borrow money or sell assets to cope with the direct costs of TB treatment and ART and 10% in the case of obstetric care. It is particularly concerning that about 40% of TB and ART service users in the one rural site had to borrow or sell assets to cope with health care costs. The burden of catastrophic health care costs and need to borrow or sell assets was significantly greater for lower socio-economic groups (Cleary *et al.* forthcoming; Silal *et al.* 2012).

Other research we have undertaken on malaria found that out-of-pocket spending related to using health services exceeded 10% of monthly household income for 11% of households in KwaZulu-Natal and 10% of households in Mpumalanga (Castillo-Riquelme *et al.* 2008). This finding is of importance as malaria is an acute condition, generally requiring limited use of health services; it demonstrates that the burden of the direct costs of illness on individual affected households must be taken seriously.

The key message from this research is that even if no service-related fees are charged, users still face direct costs. Transport costs can be substantial, and were the single largest direct costs for TB and ART service users and the second largest (after supplies) for obstetric care users (Cleary *et al.* forthcoming). In the malaria study, transport costs accounted for the majority of direct costs (Castillo-Riquelme *et al.* 2008). Transport to health facilities imposes a particularly high burden on TB patients who, in some areas, are expected to visit a health facility on a daily basis for directly-observed treatment. Our research also found that pregnant women often face considerable transport problems to reach a facility when going into labour at night; public transport was unavailable, ambulances were unavailable in some rural areas or refused to enter some informal settlements in urban areas and the family was unable to pay for private transport (e.g. from a neighbour) (Silal *et al.* 2012). The reason for high costs related to seeking care from other health care providers requires further investigation to determine whether this is due to deficiencies in the services provided at public sector facilities or whether it is simply a matter of choice (e.g. a preference for traditional healers). However, it is clear from our research that a lack of supplies at some facilities and the need for pregnant women to purchase such supplies, is a major contributor to direct costs for those using obstetric services (Silal *et al.* 2012). Other research that we have undertaken indicates that households regard improved availability of effective medicines as the single greatest priority for improved public sector health services (Honda *et al.* forthcoming).

This research only considers the direct costs associated with seeking health care. It does not touch on the indirect costs related to lost productivity and income due to ill-health. In studies undertaken in other countries, indirect costs of ill-health are frequently substantially greater than direct costs (McIntyre *et al.* 2006). This research also doesn't highlight that all too often, poor households simply do not use health services when ill. A household survey in a rural community in South Africa found that 48% of those reporting a chronic illness (an illness lasting more than one month) did not seek treatment (Goudge *et al.* 2009).

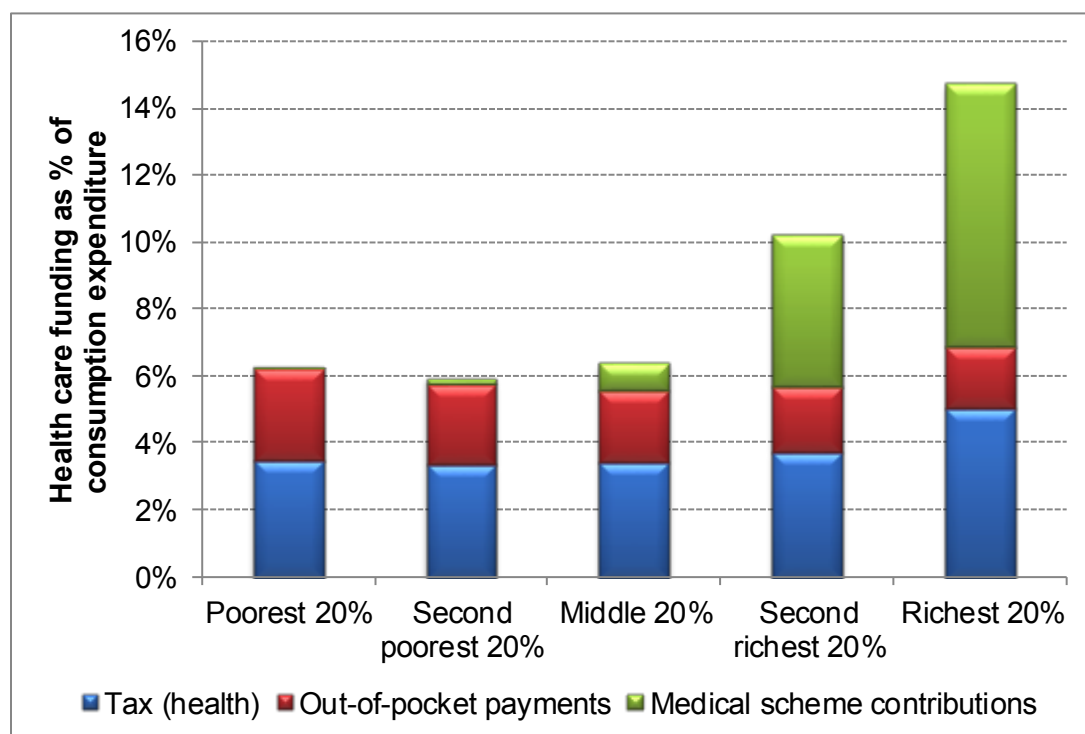
Summary

Our research indicates that in South Africa, as has been found in many other countries, poverty and income inequalities contribute to ill-health and that ill-health can impoverish households, or at least severely threaten household livelihoods. While it is necessary to address the social determinants of health (e.g. improve living conditions such as housing and access to potable water and sanitation; reduce unemployment; reduce illiteracy; reduce income inequalities), it is equally important to ensure access to needed health care and to provide protection against the financial risks associated with illness. It is therefore also necessary to consider the extent to which funding of the health system and the use of health services is equitable.

Distribution of the burden of health care financing

We have also assessed the distribution of the current burden of financing health care in South Africa. As indicated in Figure 2, the distribution of general taxes is progressive, with the highly progressive structure of personal income taxes being partially offset by the regressivity of VAT and other indirect taxes¹. Out-of-pocket payments for health care are regressive. The most progressive part of health care financing in South Africa is contributions to medical schemes, which are almost exclusively borne by the richest 40% of the population (where medical scheme members are concentrated). Three things should be noted in relation to medical scheme contributions. First, while the richest groups bear the burden of these contributions, only they benefit from services funded by these schemes, with a mere 16% of the population deriving such benefits. Second, medical scheme contributions are indeed a heavy burden. They account for the largest share of health care financing contributions for the richest 20% of the population (i.e. are greater than tax payments which are allocated to the health sector and out-of-pocket payments combined in this group). This is so even though only half of the richest quintile belong to medical schemes. This indicates that the health service benefits for medical scheme members come at a very high cost. The rate of increases in medical scheme spending and contribution rates has been a cause for concern for some decades now (McIntyre *et al.* 1995; McIntyre 2010) and raises questions about whether medical scheme members are getting value for money and about the affordability and sustainability of medical schemes in the long-term.

Figure 2: Distribution of health care funding across socio-economic groups, relative to their ability-to-pay, in South Africa (2005/2006)



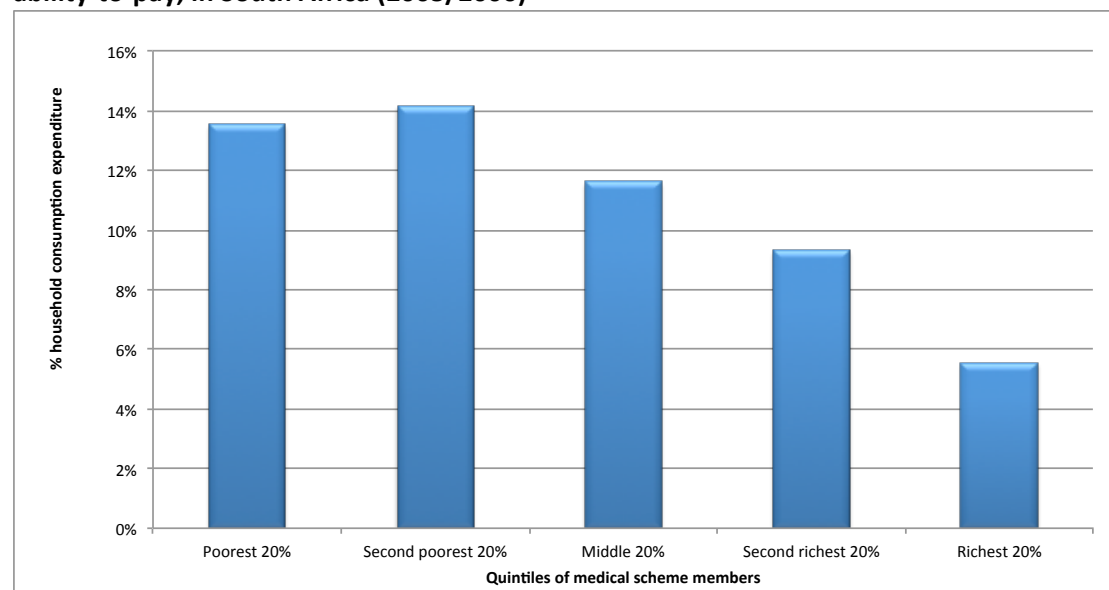
Source: Ataguba and McIntyre (2012b)

Note: Approximately 11% of general tax revenue is allocated to the health sector. Only this component of tax revenue is reflected in this figure.

¹ Financing mechanisms are progressive when higher-income groups contribute a higher percentage of their income than do lower-income groups; they are regressive when lower-income groups contribute a higher percentage of their income than higher-income groups.

Finally, while medical scheme contributions are progressive when considered over the entire South African population, they are regressive across medical scheme members (see Figure 3). While medical scheme contributions account for less than 6% of household consumption expenditure for the richest 20% of medical scheme members, they account for about 14% of household consumption expenditure for the poorest 40% of medical scheme members. If medical scheme membership is extended to a greater share of the population, this pattern of regressivity would become even more pronounced (as new members would have a lower socio-economic status than existing scheme members) and the extent of progressivity across the overall population (as reflected in Figure 2) would decline.

Figure 3: Distribution of contributions across medical scheme members, relative to their ability-to-pay, in South Africa (2005/2006)



Source: McIntyre (2010)

Summary

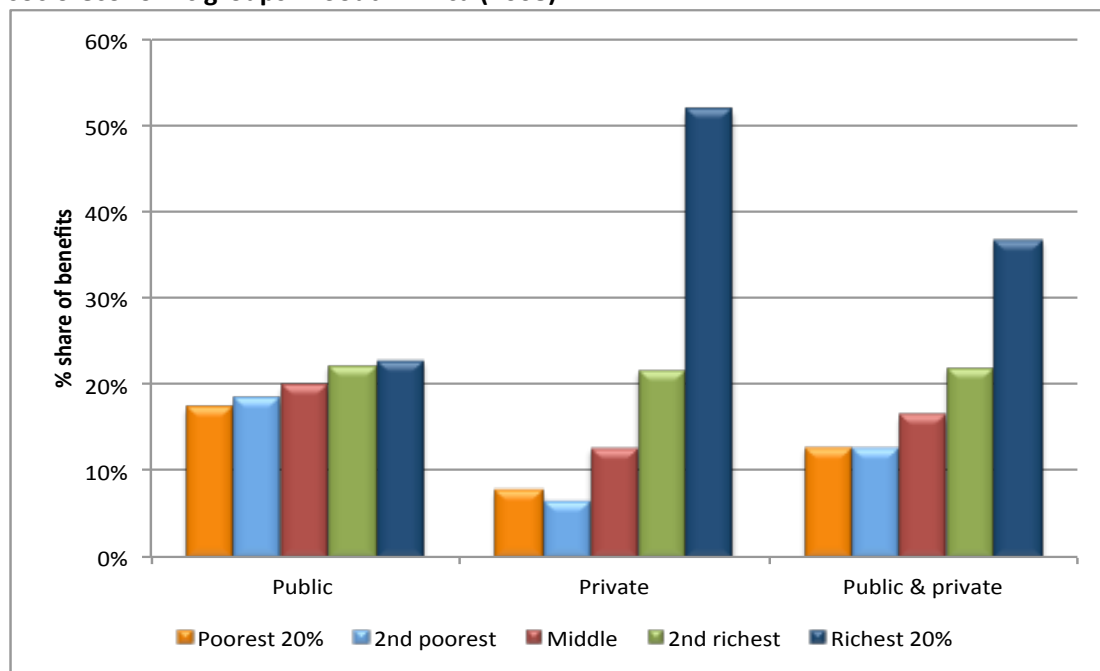
Although health care financing in South Africa is currently progressive overall, the most progressive component is contributions to medical schemes, from which only 16% of the population benefits. Medical scheme contributions represent the greatest burden of health care financing for the richest 20% of the population.

Distribution of benefits from the use of health services

Although, as highlighted in Figure 1, the burden of ill-health and therefore the need for health services is greater among the poor than the rich, Figure 4 shows that the benefits² from using health services (both public and particularly private sector) are far greater among the rich. Although benefits from using public sector services are 'pro-rich', the disparities in these benefits across socio-economic groups are not as great as is the case in terms of private sector services and overall health services.

² Benefits are calculated as the utilisation rate for each category of provider (i.e. number of visits or number of inpatient days per person per year) multiplied by the unit cost of providing that category of service. This provides an indication, in monetary terms, of the benefits of using different kinds of services.

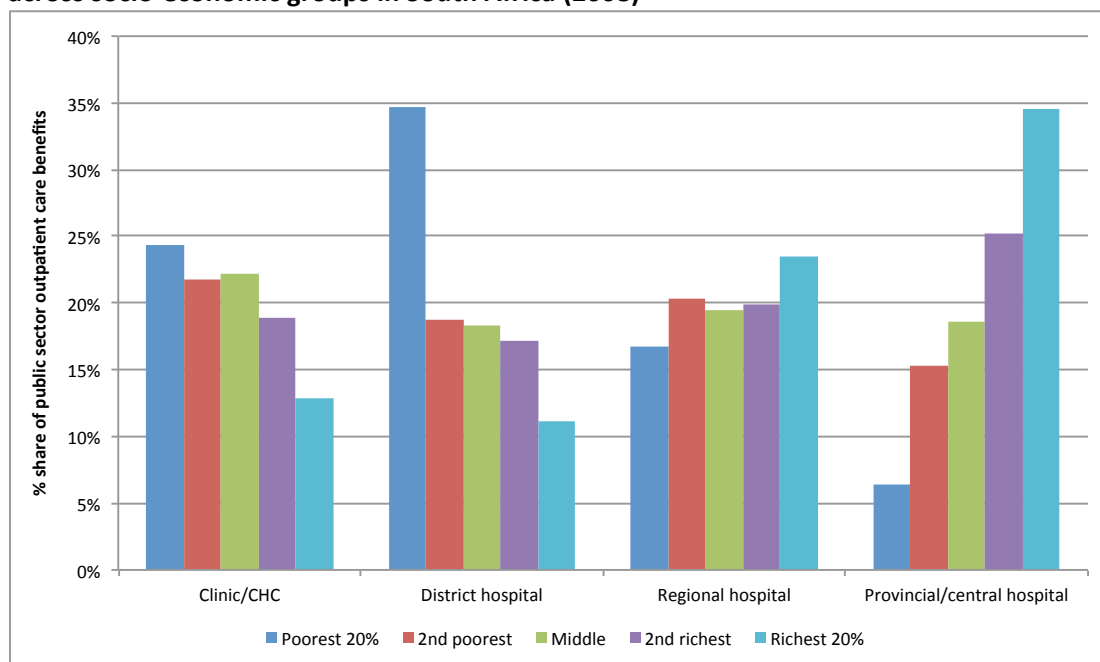
Figure 4: Distribution of the benefits of using public and private health services across socio-economic groups in South Africa (2008)



Source: Alternative presentation of data reported in Ataguba and McIntyre (2012a)

The only services that are 'pro-poor' are public sector primary health care services provided at clinics and community health centres and outpatient and inpatient services in district hospitals (see Figures 5 and 6). While it is encouraging that these services are reaching the poor, this finding highlights the barriers to referral services for lower socio-economic groups, particularly in terms of provincial and central hospitals.

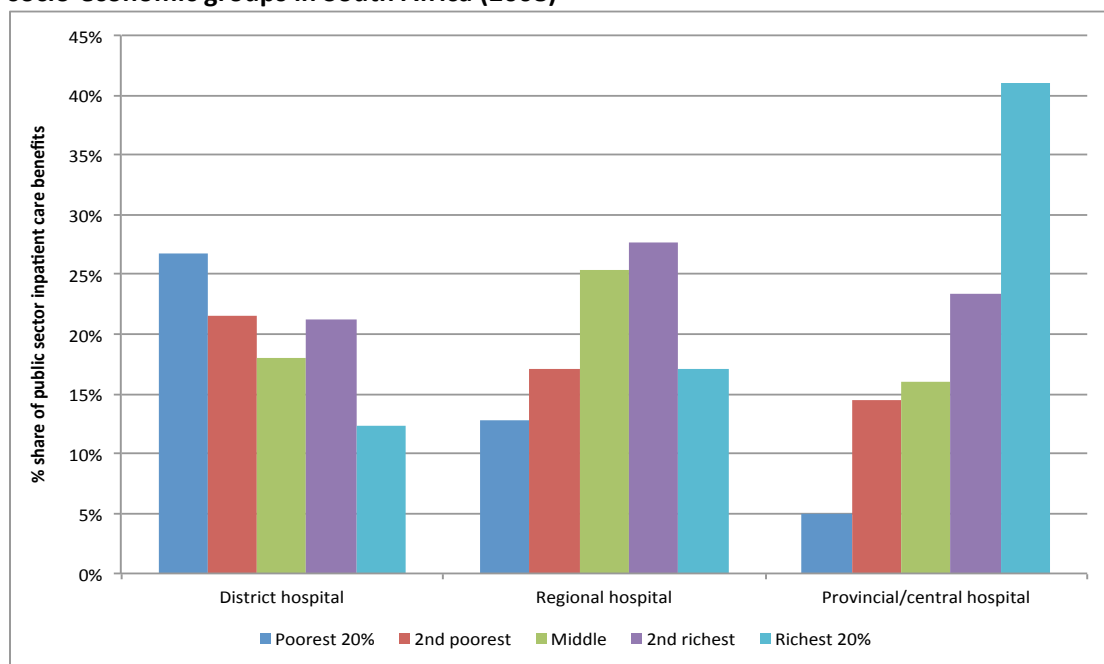
Figure 5: Distribution of the benefits of using public sector outpatient health services across socio-economic groups in South Africa (2008)



Source: Alternative presentation of data reported in Ataguba and McIntyre (2012a)

While some may try to argue that the differential use of different levels of care across socio-economic groups reflects different disease patterns across these groups, as shown in Figure 1, poorer groups not only face a greater burden of infectious diseases (often called diseases of poverty) but are also facing a high and rapidly growing burden of non-communicable diseases (often called diseases of affluence). Thus, disease burden does not explain the marked differences in use and benefits at higher level hospitals. Some are perplexed by the high levels of use and benefits from provincial and central hospitals for the richest 20% of the population. However, it should be noted that only 50% of people in the richest quintile, and only 13% of the second richest quintile, are members of medical schemes. Private sector hospital services are almost exclusively used by medical scheme members (McIntyre 2010), meaning that those in the richest and second richest quintiles who are not medical scheme members are dependent on public sector hospitals for inpatient, and to some extent specialist outpatient care. It is unsurprising that richer individuals would choose to go to higher level public sector facilities (due to perceptions of better quality care provided by the most highly trained health professionals) and be better placed to negotiate direct access to these facilities (access to these facilities is meant to be restricted to those referred from lower level public facilities).

Figure 6: Distribution of the benefits of using public sector inpatient health services across socio-economic groups in South Africa (2008)



Source: Alternative presentation of data reported in Ataguba and McIntyre (2012a)

Summary

The above research indicates that the distribution of benefits from using health services (see last set of bars in Figure 4) is not in line with the distribution of ill-health (see Figure 1) across socio-economic groups. Given the greater burden of illness among lower socio-economic groups, we would expect to see a 'pro-poor' distribution of use and benefits from health services across all levels of public sector health services. Given the heavy concentration of use of private sector services among medical scheme members, who are concentrated in the richest 20% of the population, the strongly 'pro-rich' distribution of use and benefits of private sector services is not surprising. What must be recognised is that the private sector, and particularly the magnitude of funding for private sector services relative to the size of the population able to use these services, impacts on the public sector (e.g.

influences the distribution of health professionals between the two sectors) and hence on the overall health system's ability to meet the health care needs of the South African population.

Would a universal health system help to address these challenges and would it be affordable?

The question facing South African health policy makers at present is whether changing the way in which the health system is currently financed and services delivered would improve its ability to ensure that those in need of health care are able to access good quality services and to provide financial protection against the costs associated with using health services? Can the efficiency and equity of generating and using financial resources be improved through health system reforms? Can the health system contribute to reducing poverty and income inequalities in South Africa?

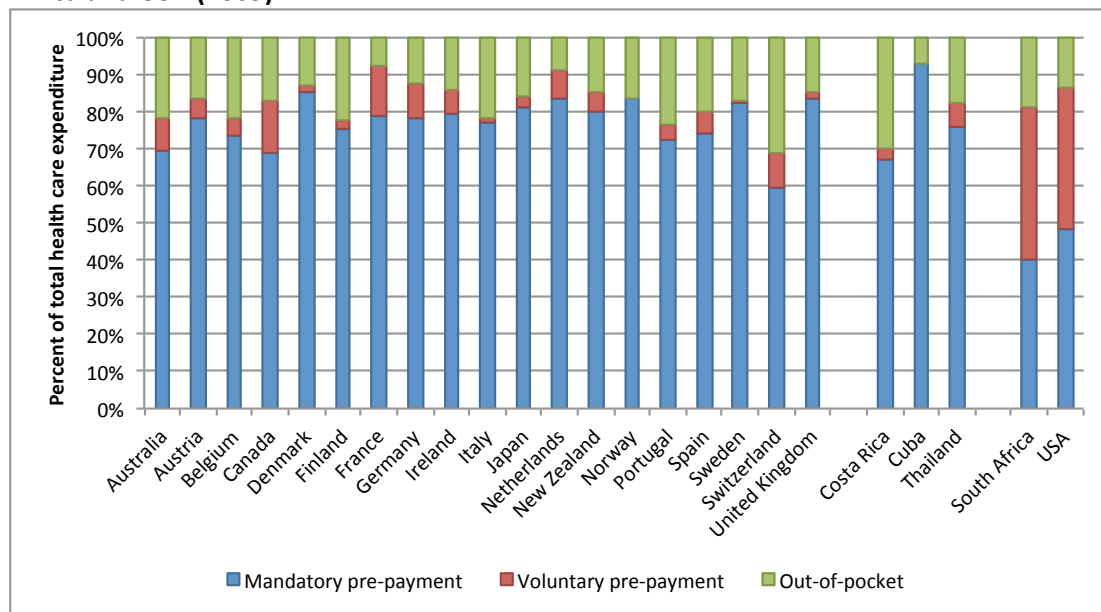
What reforms are proposed and why are they seen as necessary?

The South African government has proposed introducing a National Health Insurance (NHI). While there is considerable public confusion about the nature of the proposed reforms, in essence they are aimed at moving towards a universal health system. South Africa is not alone in this effort; achieving universal coverage tops the global health policy agenda at present. The two key dimensions of universal coverage are:

- Providing financial protection against the costs associated with using health care for all; and
- Ensuring access to quality health care for all on the basis of need (World Health Organisation 2010).

Many South Africans are confused as to why a health care financing reform is needed to achieve this. The reason is two-fold. First, there is international consensus that it is only possible to achieve universal coverage through mandatory, pre-payment funding mechanisms (i.e. tax – general and/or dedicated taxes – and possibly also mandatory insurance coverage) (World Health Organisation 2010). This position is borne out by international experience. As indicated in Figure 7, OECD countries with what can be described as universal health systems, and middle-income countries that are regarded as having made great strides in this direction, are primarily funded through mandatory pre-payment mechanisms. The only OECD country that has not achieved universal coverage is the United States of America (USA). The funding pattern in South Africa is remarkably similar to that in the USA. It is noteworthy that South Africa has the highest percentage share of total health care expenditure through voluntary (private) health insurance schemes in the world (Drechsler and Jutting 2005), yet only 16% of the population benefits from these schemes. The international evidence is clear; in order to move to a universal health system, South Africa needs to increase its relative share of health care expenditure arising from mandatory pre-payment funding; i.e. a change in health care financing is a pre-requisite for moving to universal coverage.

Figure 7: Financing mechanisms in countries with universal coverage compared with South Africa and USA (2009)



McIntyre (2012)

The second reason why reform of the health care financing system is needed is that financing relates not only to revenue generation (i.e. how funds are raised), but also to the functions of pooling and purchasing of services (Kutzin 2001), changes in both of which are critical in order to achieve universal coverage. Pooling of funds is necessary to address the unpredictability of illness, particularly at the individual level, the inability of individuals to mobilise sufficient resources to cover unexpected health care costs, and, consequently, the need to spread health risks over as broad a section of the population and period of time as possible. Pooling of funds allows for both income cross-subsidies (from the rich to the poor) and risk cross-subsidies (from the healthy to the ill). The larger the pool, the greater the potential for cross-subsidies and the lower the risks related to sustainability (Davies and Carrin 2001). In South Africa, there is considerable fragmentation of risk pools, particularly in the medical scheme sector, raising sustainability concerns and cross-subsidies in the overall health system are constrained by the extent of fragmentation in fund pools. The far greater potential for maximising fund pooling in mandatory pre-payment systems is a key reason why this financing mechanism is such a critical element of reforms to pursue universal coverage.

Purchasing relates to using the pooled resources equitably and efficiently to ensure that appropriate services of good quality are available when needed. It involves not only identifying the range of services required to meet the health care needs of the population, but also providing appropriate incentives for the efficient delivery of good quality services through using appropriate provider payment mechanisms. In the South African context, there is almost no active purchasing either in the public or private sector at present. Instead, there is passive fee-for-service payment by medical schemes of private providers' bills and passive granting of line-item budgets to public facilities with little or no management authority or incentive to use these resources efficiently.

The Green Paper on NHI makes it clear that the first phase of the reform is to focus on improving the quality of care and addressing current challenges in the management and delivery of health care in the public health sector (Department of Health 2011). Other

research we have recently undertaken, based on a household survey in the Eastern and Western Cape and using a discrete choice experiment methodology, indicates that communities regard the greatest priority for improving the quality of public sector services was improved availability of effective medicines. The next highest priorities were to receive a thorough physical examination and an explanation of their diagnosis and recommended treatment from health professionals (Honda *et al.* forthcoming). These findings indicate that improved procurement and particularly distribution of essential medicines should receive attention, as should improved staffing levels to increase consultation times to allow for improved clinical engagement between health care providers and patients. Ways of drawing on health professionals working in the private sector will also be explored during the first phase of reforms, which could contribute to improved staff to population ratios and address the second priority highlighted in our research. It is likely that this phase of reform will need to be funded through increased allocations from general tax revenue to the health sector; it is unlikely to be feasible to introduce dedicated taxes or other forms of mandatory pre-payment for the health sector until improved quality and efficiency in public sector health service delivery has been demonstrated. It is critical that this phase includes the delegation of decision-making authority to individual public hospitals and district level management structures for primary health care services as a precursor to creating a purchaser-provider split.

The next phase will focus on the core financing reforms that, as outlined above, are critical for achieving a universal health system, namely:

- Increasing the share of total health care expenditure from mandatory pre-payment financing mechanisms (e.g. introducing a surcharge on personal income tax and/or payroll tax on employers that are dedicated to the health sector);
- Ensuring as integrated a funding pool as possible; and
- Undertaking active purchasing of health services through the establishment of the NHI Fund, which would use the pooled tax funds to purchase from both public and private facilities on an equal basis, using provider payment mechanisms that incentivise the efficient provision of high quality services (such as capitation payments for primary care services and diagnosis-related groups for hospital services). It is critical to recognise that active purchasing, particularly changing provider payment mechanisms, is not feasible within the current public sector budgeting framework. Thus, establishing a NHI Fund as an independent purchasing institution, with appropriate governance structures, is a pre-requisite for the equitable and efficient availability of high quality services.

In summary, how will these reforms promote the achievement of universal coverage? The proposal in the Green Paper that services should be free of any fees at the point of service delivery and that health services should largely be funded from mandatory pre-payment mechanisms (although the richest will in all likelihood choose to supplement this with voluntary insurance and out-of-pocket payments), will contribute to improving financial protection for all South Africans. The improved pooling and purchasing of health services will contribute to improved access to needed health care for South Africans.

Will these reforms improve equity in financing and the benefits of using health services and will they be affordable?

In order to explore the equity impact and affordability of the proposed universal coverage reforms, we undertook extensive modelling research (McIntyre and Ataguba 2012). We compared the status quo (continuing with the health system as it is currently structured), with moving to a universal health system and an alternative health reform (extending

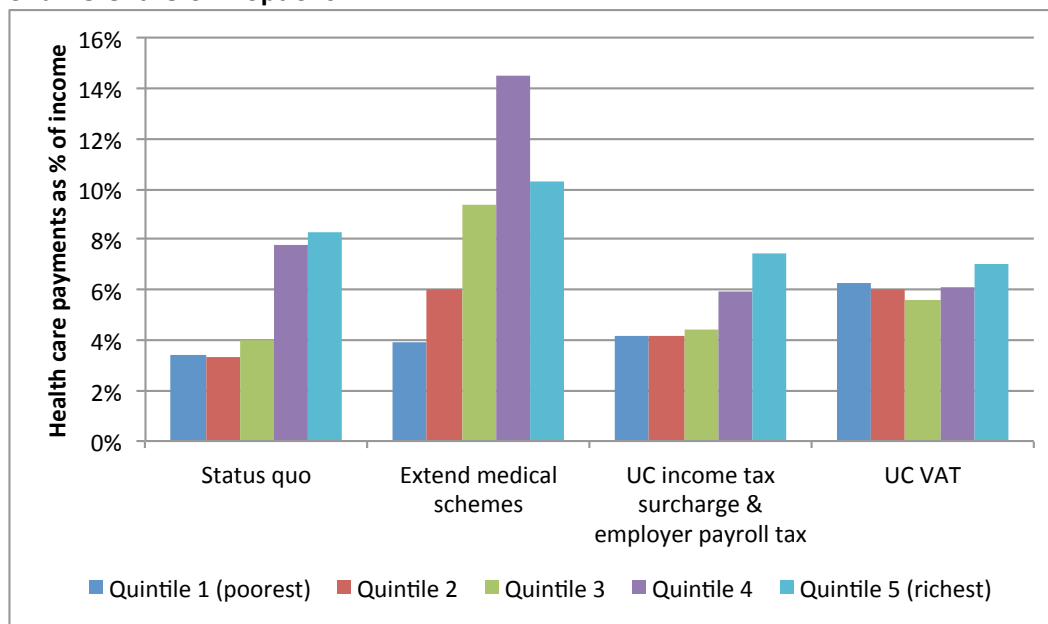
medical scheme membership to all formal sector workers and their dependents on a mandatory basis).

Our modelling produced the following results:

- If the status quo was maintained, total health care expenditure would increase to approximately 9.5% of GDP, largely due to continued increases in medical scheme expenditure and contributions (medical scheme spending and out-of-pocket payments on private sector services would account for 6% of GDP and tax-funded health care would be about 3.5% of GDP);
- If medical scheme coverage was extended to all formal sector workers and their dependents (which would translate into approximately 40% of the population being covered by these schemes), total health care expenditure would rise to over 13% of GDP, with medical scheme spending accounting for 10% of GDP (despite assumptions of improved cost containment in within schemes) and tax-funded health care for 3% of GDP;
- If a universal coverage system was achieved, total health care expenditure would remain similar to present levels of less than 9% of GDP, with schemes expenditure only accounting for 2.2% of GDP (as it was assumed that some current scheme members would rely on their universal entitlements, while only the richest would retain supplementary medical scheme coverage) but tax funding of health care would need to increase to just over 6% of GDP.

Figures 8 and 9 indicate how the financing and benefit incidence patterns will change for these two different reforms relative to the status quo health system. Figure 8 shows that moving from the status quo to a mandatory extension of medical schemes for all formal sector workers and their dependents would not only dramatically increase overall health care expenditure (so that they would approach spending levels in the USA) but would also place a very heavy financing burden on the middle- to upper-income groups. In contrast, moving to a universal coverage system, if funded through a surcharge on personal income tax and payroll employers' tax, would increase the tax burden on all income groups, but the burden of financing currently borne by medical scheme members in the richest two quintiles would decrease considerably. Funding a universal coverage system through increasing the VAT rate would substantially increase the burden on lower socio-economic groups, given the regressivity of VAT in South Africa.

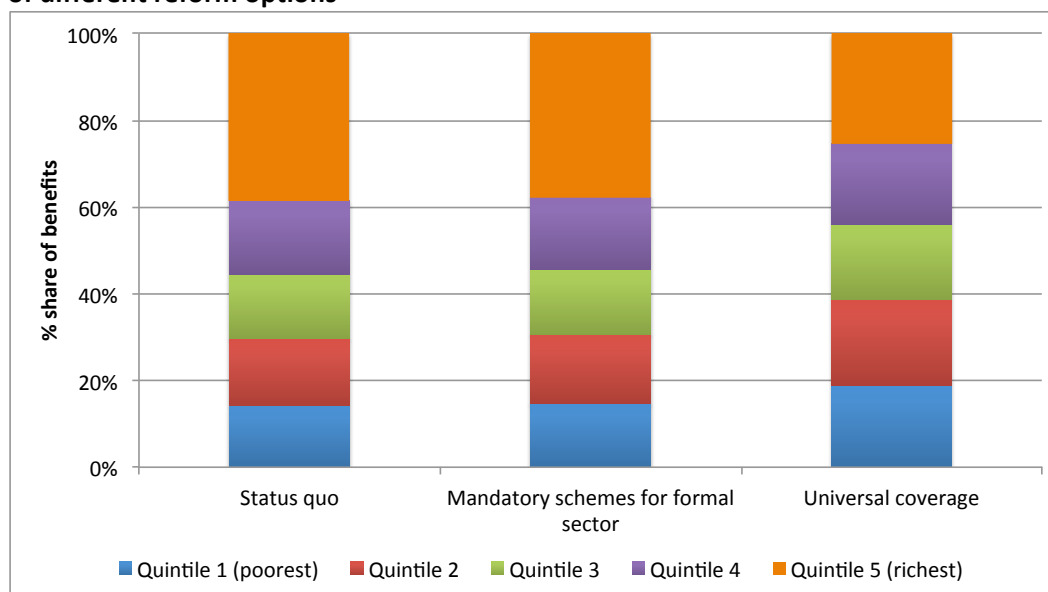
Figure 8: Distribution of the burden of financing health care across socio-economic groups of different reform options



Source: Alternative presentation of data reported in McIntyre and Ataguba (2012)

Figure 9 indicates that maintaining the status quo would lead to a very similar benefit incidence to what prevails at present (compare the first column in Figure 9 with the last set of bars in Figure 4). A mandatory extension of medical scheme coverage to all formal sector workers and their dependents would not alter the distribution of benefits markedly. While the universal coverage system would not lead to a pro-poor distribution of service benefits, largely due to the continued supplementary voluntary insurance scheme coverage of the richest groups, it would lead to a far more equitable distribution of service benefits.

Figure 9: Distribution of the benefits of using health services across socio-economic groups of different reform options



Source: Alternative presentation of data reported in McIntyre and Ataguba (2012)

Summary

Our research highlights that the global trend of pursuing a universal health system will promote health system equity in South Africa, particularly in relation to the benefits of using health services. There is considerable evidence from countries such as Thailand who have moved to universal coverage that health system equity and financial protection has improved dramatically, as has overall health status and equity in health outcomes (Patcharanarumol *et al.* 2011). Our findings also suggest that a universal health system is also affordable, although it will require a substantial increase in tax funding. However, this is in line with the international experience that mandatory pre-payment funding is required to achieve a universal health system. It should also be noted that increased tax funding of health services is an important mechanism for reducing income inequalities. Indeed, the GEAR policy viewed tax funding of social services as the major mechanism for redistribution.

We recognise that achievement of an equitable and efficient universal health system is heavily dependent on first improving public health services, which currently serve the majority of the population, and finding ways to draw on the human resources located in the private health sector to help meet the health care needs of the entire population. Improving the public sector requires considerable management reform and capacity, and other reforms to achieve universal coverage include creating an integrated funding pool and active purchasing by the proposed NHI Fund.

Key policy implications of research

The key policy implications of this wide-ranging body of research include:

- Out-of-pocket payments for health care, which are regressive in South Africa and are contributing to catastrophic payment levels for vulnerable households, should be avoided (including removing user fees at public hospitals for the uninsured in the present system and avoiding co-payments under the proposed national health insurance); the emphasis should be placed on progressive, mandatory pre-payment financing mechanisms.
- The quality of public sector primary care services and district hospitals, which are the only services that are pro-poor, should be improved.
- Primary care services should include direct delivery to households (e.g. through community health workers) to reduce the direct costs of transport to primary health care facilities.
- Patient transport to referral facilities should be provided for low-income patients to improve access to specialist services where needed and provide even greater financial protection from the cost of using health services.
- Urgent attention should be given to improved procurement and distribution of medicines to all public sector facilities. This will not only improve the quality of care at public sector facilities (i.e. is a 'quick win'), but will also contribute to improved financial protection as patients will not need to pay out-of-pocket to purchase medicines they need when not available at the public facility.
- Provision of a comprehensive range of health services to all South Africans, funded through progressive pre-payment mechanisms, is feasible and would promote health service use that is in line with the distribution of the burden of ill-health. However, this requires improved pooling of health care funds (to promote both income and risk cross-subsidies) and active purchasing of services from both public and private providers to promote efficiency and sustainability.

References

Ataguba JE, Akazili J, McIntyre D (2011). Socioeconomic-related health inequality in South Africa: evidence from General Household Surveys. *International Journal for Equity in Health* 10: 48

<http://www.equityhealthj.com/content/pdf/1475-9276-10-48.pdf>

Ataguba JE, McIntyre D (2012a). Who benefits from health services in South Africa? *Health Economics, Policy and Law*. Doi: 10.1017/S1744133112000060

Ataguba JE, McIntyre D (2012b). Paying for and receiving benefits from health services in South Africa: Is the health system equitable? *Health Policy and Planning*, 27 (Suppl 1): 35-45

Ataguba JE, Alaba O (forthcoming). Explaining health inequalities in South Africa. *Under review*

Ataguba JE, Goudge J (in press) The impact of health insurance on healthcare utilisation and out-of-pocket payments in South Africa. *The Geneva Papers on Risk and Insurance – Issues and Practice*.

Bradshaw D, Nannan N, Laubscher R, Groenewald P, Joubert J, Nojilana B, Norman R, Pieterse D, Schneider M (2006). *South African national burden of disease study 2000: estimates of provincial mortality: summary report*. Tygerberg: South African Medical Research Council.

Castillo-Riquelme M, McIntyre D, Barnes K (2008). Household burden of malaria in South Africa and Mozambique: is there a catastrophic impact? *Tropical Medicine and International Health*; 13(1): 108-122.

Cleary S, Birch S, Chimbindi N, Silal S, McIntyre D (forthcoming). Investigating the affordability of key health services in South Africa. Accepted by *Social Science and Medicine*

Coburn D (2000). Income inequality, social cohesion and the health status of populations: the role of neo-liberalism. *Social Science & Medicine*, 51, 135-146

Davies, P. and Carrin, G. (2001) Risk-pooling - necessary but not sufficient? *Bulletin of the World Health Organization*, 79, 587

Deaton A (2002). Policy implications of the gradient of health and wealth. *Health Affairs*, 21, 13-30.

Deaton, A. (2003). Health, inequality, and economic development. *Journal of Economic Literature*, 41, 113-158.

Department of Health (2011). National Health Act (61/2003): Policy on National Health Insurance. Government Gazette 34523. Pretoria: Department of Health.

Drechsler D, Jutting J (2005). *Is there a role for private health insurance in developing countries?* Berlin: German Institute for Economic Research.

Goudge, J., Gilson, L., Russell, S., Gumede, T., & Mills, A. (2009a). Affordability, availability and acceptability barriers to health care for the chronically ill: Longitudinal case studies from South Africa. *BMC Health Services Research*, 9, 75.

Honda A, Ryan M, van Niekerk R, McIntyre D (forthcoming). Community views on the prioritization of reforms to improve public sector health service quality in South Africa: Findings of a household discrete choice experiment. Under review.

Kutzin, J. (2001) A descriptive framework for country-level analysis of health care financing arrangements. *Health Policy*, 56, 171-204.

Limwattananon S, Tangcharoensathien V, Prakongsai P (2007). Catastrophic and poverty impacts of health payments: results from national household surveys in Thailand. *Bulletin of the World Health Organization*, 85, 600-606.

Macinko JA, Shi L, Starfield B, Wulu JT (2003). Income inequality and health: a critical review of the literature. *Medical Care Research and Review*, 60, 407-452

Mackenbach J (1992). Socio-economic health differences in the Netherlands: a review of recent empirical findings. *Social Science & Medicine*, 34, 213-226.

Mackenbach JP, Stirbu I, Roskam AJR, Schaap MM, Menvielle G, Leinsalu M, Kunst AE (2008). Socioeconomic inequalities in health in 22 European countries. *New England Journal of Medicine*, 358, 2468-2481

McIntyre D, Valentine N, Cornell J (1995). Private sector health care expenditure in South Africa. *South African Medical Journal*; 85(3): 133-135.

McIntyre D, Thiede M, Dahlgren G, Whitehead M (2006). What are the economic consequences for households of illness and of paying for health care in low- and middle-income country contexts? *Social Science and Medicine* 62: 858-865.

McIntyre D (2010). *Private sector involvement in funding and providing health services in South Africa: Implications for equity and access to health care*. EQUINET Discussion Paper 84. Harare: Regional Network for Equity in Health in Southern Africa. (<http://www.equinet africa.org/bibl/docs/DIS84privfin%20mcintyre.pdf>)

McIntyre D (2012). What healthcare financing changes are needed to reach universal coverage in South Africa. *South African Medical Journal*; 102(6): 489-490.

McIntyre D, Ataguba JE (2012). Modelling the affordability and distributional implications of future health care financing options in South Africa. *Health Policy and Planning*, 27 (Suppl 1): 101-112

Patcharanarumol W, Tangcharoensathien V, Limwattananon S, Panichkriangkrai W, Pachanee K, Pongkantha W, Gilson L, Mills A (2011). In: Balabanova D, McKee M, Mills A. 'Good health at low cost' 25 years on: What makes a successful health system? London: London School of Hygiene and Tropical Medicine.

Ross CE, Wu C (1995). The links between education and health. *American Sociological Review*, 60, 719-745.

Silal SP, Penn-Kekana L, Harris B, Birch S, McIntyre D (2012). Exploring inequalities in access to and use of maternal health services in South Africa. *BMC Health Services Research*; 12: 120

Wagstaff A (2002). Poverty and health sector inequalities. *Bulletin of the World Health Organization*, 80, 97-105

Wagstaff A, van Doorslaer E (2003). Catastrophe and Impoverishment in Paying for Health Care: with applications to Vietnam 1993-98. *Health Economics*, 12, 921-33

Wilkinson RG, Pickett KE (2006). Income inequality and population health: a review and explanation of the evidence. *Social Science & Medicine*, 62, 1768-1784

World Health Organisation (2010). *Health systems financing: The path to universal coverage. World Health Report 2010*. Geneva: WHO.