

## LIMS Reforms and Equitable Subsidies

*The purpose of this series of policy briefs on National Health Insurance (NHI) and the related IMSA web-site is to put in the public domain material and evidence that will progress the technical work of developing a National Health Insurance system in South Africa. This includes tools for costing NHI and evidence on where savings could be achieved in moving to a future mandatory system with universal coverage.*

This policy brief considers the Low Income Medical Scheme (LIMS) recommendations that were made in 2006<sup>1</sup>. The LIMS reforms are examined in the light of subsequent evidence for their impact on low income workers. The impact is compared to that of a per capita subsidy and to income cross-subsidies that were planned in the work on a mandatory health insurance system<sup>2</sup>. Building on the ideas in Policy Brief 16<sup>3</sup>, a way forward is suggested that would use equitable subsidies across the public and private sectors, including medical schemes, LIMS and Bargaining Council schemes, to link the financing of all these forms of healthcare.

### 1. The Initial Costing of the Proposed LIMS Benefit Package

The LIMS process reported in 2006<sup>1</sup> under the leadership of Dr Jonny Broomberg: "The LIMS process has examined three broad sets of interventions that could be used to materially reduce the net medical scheme premium costs to low income households. These are:

- Direct subsidies, either from employers, or the State, or both.
- Changes to the scope of benefits offered by medical schemes.
- Reductions in the costs of healthcare goods and services."

The LIMS process investigated the possible "establishment of separate medical schemes, or separate options within medical schemes, open only to low income households, which could be subject to a different regulatory environment, including a lower cost prescribed minimum package". The debates around the contents of the LIMS package and the final recommendations are dealt with in detail in Policy Brief 10<sup>4</sup>.

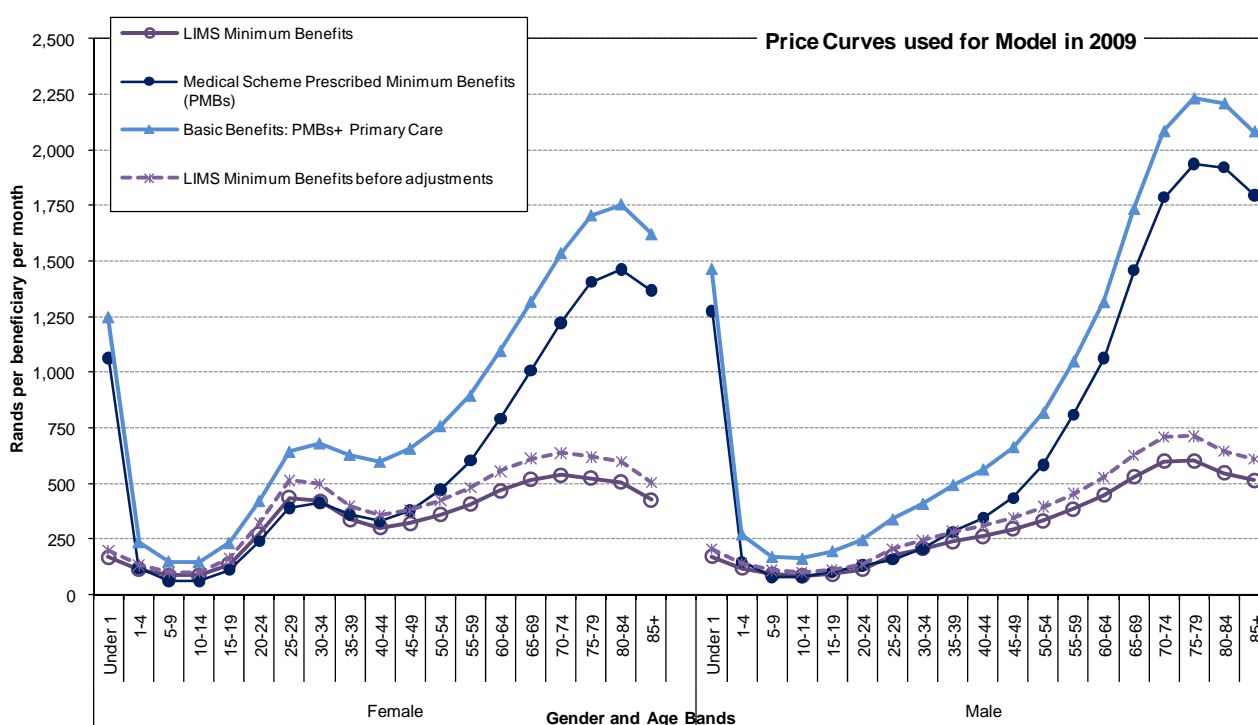
"The [LIMS minimum package] proposed is intended to provide a minimum of a reasonably comprehensive package of out- of-hospital, primary healthcare." "LIMS members will have the protection of the current PMBs, except that only some of this would be funded by LIMS schemes themselves, with the balance of this entitlement funded and provided by the public sector. It was noted that some of this entitlement within the public sector may be limited to the extent that such members are still required to pay user fees in the public hospital system."

A preliminary costing was done but this was not done by age and gender. The final report said that " ... the current estimate of the cost of the [LIMS minimum package] in 2006 is approximately R108 per beneficiary per month. It is essential to note that these costs should be regarded as indicative only. Actual LIMS packages offered in the market are likely to cost somewhat more than this, due to the inclusion of additional services beyond those mandated in the proposed LMP, and due to variance between the assumptions utilised here and actual experience in the market.

## 2. Cost Curves for LIMS Minimum Package by Age and Gender

McLeod & Grobler<sup>5</sup> developed component cost curves to examine a range of benefit designs, using data from 2007. From these components, an estimate of the LIMS minimum package was determined by age and gender. The work on LIMS was first shown at an Actuarial Society meeting in 2009<sup>a</sup>, then subsequently updated to 2009 terms in releasing an initial costing of various packages under NHI<sup>6</sup>. The curves have been refined with further work and are illustrated for 2009 below. The LIMS package was determined using:

- PMBs for maternity in hospital;
- PMBs for chronic medicine;
- PMBs for related visits and tests; and
- primary care including specialists, as delivered in a capitated setting.



**Figure 1: Estimates of Cost Curves by Age and Gender in 2009, comparing PMBs, BBPs and LIMS Minimum Package**

The LIMS cost curves are shown both before adjustments and after adjustments for delivery efficiency and the expected increase in use if the package were to be made mandatory. The PMBs are shown with the new higher values determined from the actual experience of major administrators in 2008<sup>7</sup>. The issue does not affect the LIMS curves as it is assumed that the curve for hospitalizations is excluded as this benefit is to be delivered in the public sector. The Basic Benefit Package (BBP) curves consist of actual PMBs with additional primary care. This package was recommended by the International Review Panel<sup>8</sup> that considered the design of the Risk equalisation Fund (REF).

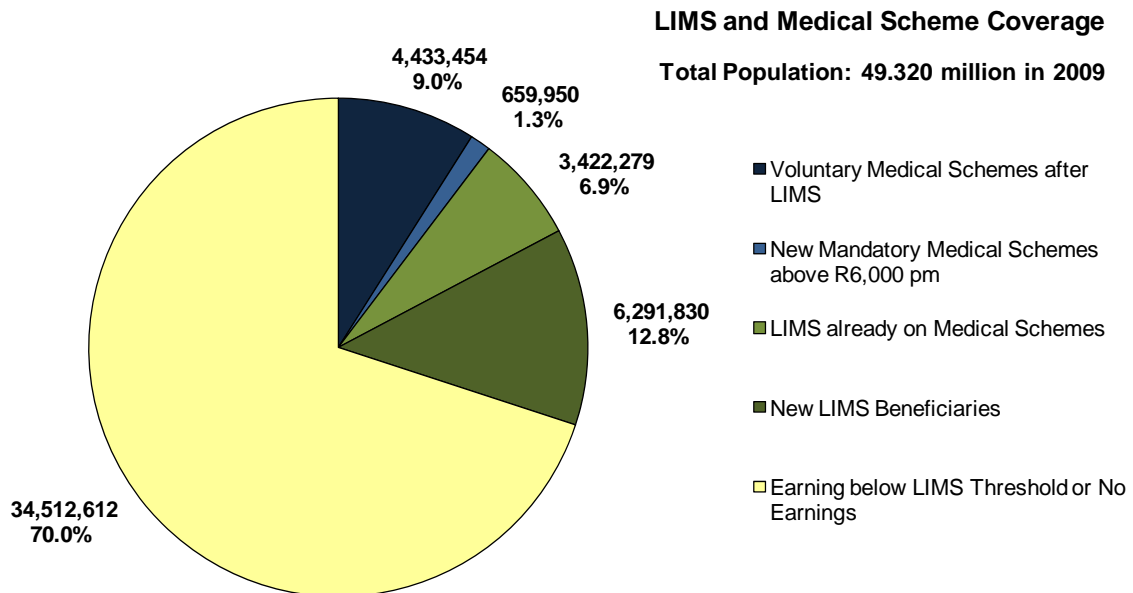
<sup>aa</sup> Actuarial Society of SA Convention 2009, presentation and spreadsheet can be downloaded from: <http://www.actuarialsociety.org.za/Convention-Papers-2009-658.aspx>

The figure above shows that the LIMS benefit design gives a curve which is much flatter with age than PMBs. The LIMS design effectively cuts the high tail from the standard PMB package and the extended BBP package. Given the shape of the LIMS curve, the LIMS pricing will thus be less sensitive to an aging profile than PMBs or other medical scheme packages.

One issue that was not addressed in the LIMS recommendations is the potential added risk to the public National Health Service (NHS). Effectively the NHS takes on the liability for the hospitalisation component (excluding maternity) which is the high tail of the curve. As the LIMS population begins to age so the cost of hospitalisation in the NHS for the LIMS beneficiaries is likely to escalate faster than the cost of the LIMS package and faster than the total package of care delivered in the NHS.

### 3. The Population for LIMS and the Impact on the Medical Schemes Population

Using the same data as was used in Policy Brief 2<sup>9</sup>, it is possible to construct the likely LIMS population of insurable families. This is shown below, showing the relationship to current medical schemes and a future mandatory insurance scheme operating from the LIMS threshold of R2,000 per month<sup>b</sup>.

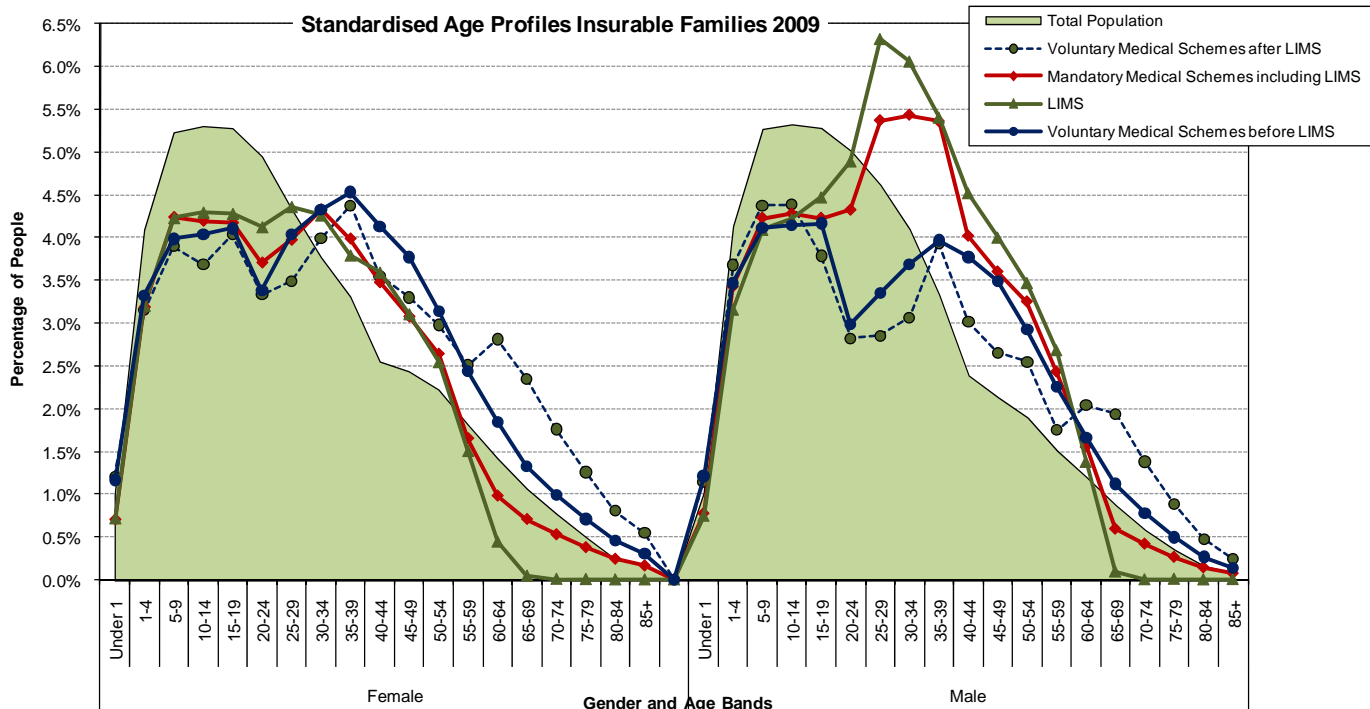


**Figure 2: Population for LIMS, Medical Schemes and Mandatory Insurance above the LIMS Threshold, Adjusted to 2009**

If cover is made mandatory from the LIMS threshold of R2,000 per month, then mandatory health insurance might cover 14.8 million beneficiaries (30.0% of the total population). However there is an overlap between LIMS and the coverage in existing voluntary medical schemes, which had 7.9 million beneficiaries in 2009. The pie chart above shows that LIMS options with a limit of R6,000 income per month in 2005 Rand terms would cover 9.7 million beneficiaries (19.7% of the population), leaving perhaps only 4.4 million on voluntary medical schemes.

<sup>b</sup> The LIMS process considered a limit of R6,000 in much of the analytical work and then recommended an upper income limit of R6,500 in 2005 Rand terms. A lower limit is not mentioned but the original terms of reference expected a lower limit of R2,000 for products of this type. Affordability below that level is difficult without significant subsidies.

Even if membership of medical schemes (or defined private health insurance funds) became mandatory over the tax threshold or the LIMS threshold, the total medical scheme population might only be increased by 0.7 million to a total of 5.1 million (10.3% of the population). This analysis shows that the LIMS age profile is very different to that of medical schemes because at the outset there are only workers and their families, with no elderly members. The profile thus has an unusual shape and is much younger than that of medical schemes, as illustrated for 2009 below.



**Figure 3: Standardised Age Profiles for LIMS and the Effect on Medical Schemes, Adjusted to 2009**

The age profile for LIMS, for both females and males, reaches zero from age 65 as it was envisaged that existing pensioners would be excluded from LIMS. While LIMS may be attractive to pensioners who are struggling to be able to afford a medical scheme on a low pension, the LIMS report<sup>1</sup> is wary of this, saying: "Membership of LIMS schemes will be open to formal sector employees, as well as self employed and informally employed individuals, and their beneficiaries." Benefit design was used as a key tool to prevent adverse selection: "The buy down risk will be even further mitigated by the strong benefit differentiation between LIMS schemes and current schemes through the exclusion of private hospital cover".

The female curves do not differ substantially in the child-bearing years. There appears to be significant anti-selection by women in the child-bearing years in order to give birth while on a medical scheme. There are significant differences in the male curves, showing that mandatory membership would bring many young males onto schemes.

The LIMS report does not deal with the eventuality of these workers and their families reaching retirement age. Over time, it would thus be expected that the LIMS population would begin to have more elderly people and thus the cost of LIMS packages would begin to rise.

An issue that has not been given sufficient attention to date in the LIMS discussions is the question of the impact of LIMS on existing medical schemes. The age profile above gives some sense of what to expect: once the LIMS group is removed from existing medical schemes, the age profile becomes slightly lower for children, lower in the early adult years and significantly higher in the late adult years. This will have a significant impact on the price in existing medical schemes.

#### 4. Cost and Community Rate for Benefits under LIMS

The community rate is the contribution rate that would be needed for a defined population for a defined package of benefits. It is usually expressed as a rate per beneficiary per month (pbpm). The community rate is determined using the cost curves by age and gender shown in Figure 1 and the population curves by age and gender in Figure 3.

The community rate for the LIMS package to cover the LIMS population of 9.7 million was estimated to be R301.53 pbpm in 2009, compared to the R479.46 pbpm needed to cover PMBs in voluntary medical schemes<sup>c</sup>. This would seem to make the cost of the LIMS package around 63% of that for PMBs but this calculation excludes the cost to the public National Health Service of providing all hospitalisation other than for maternity events.

If LIMS is implemented, the numbers remaining on medical schemes would fall sharply and those remaining on medical schemes will have an older age profile. The community rate in voluntary medical schemes is expected to increase from R479.46 pbpm to R545.07 pbpm, an increase of 114% on the price. This may make cover less affordable and the younger and healthier may fall out of cover, further increasing the price to the remaining medical scheme members.

Alternatively, if instead of LIMS all people above the LIMS threshold were offered the same mandatory package (for example PMBs), then there would be a reduction from R479.46 pbpm to R415.06 pbpm (87% of the old price) due to the addition of younger members. If the package was the Basic Benefit package (PMBs plus primary care) to bring it more in line with the LIMS population needs, then the community rate would be R622.69 pbpm<sup>d</sup>. This level of contribution is roughly double that for the LIMS package alone and would not be affordable to lower income groups without a significant subsidy or income cross-subsidy.

#### 5. Evaluation of LIMS Reforms on a Benchmark Family

In section 5 of Policy Brief 9<sup>10</sup> a methodology was described for evaluating the effects of complex sequential reforms on members by focussing on benchmark families with differing levels of income. This analysis was taken further in Policy Brief 12<sup>11</sup> where it was demonstrated that “the order in which the steps are introduced is critical and that there is a preferred order for implementing the reforms to avoid disastrous consequences for low income families.”

The same form of analysis can be used to see the impact of the LIMS reforms on potential members. The analysis by McLeod & Grobler was done in 2007 Rand terms. This earlier work used a slightly different shape in the maternity years for the LIMS curves but the essence of the conclusions remains the same.

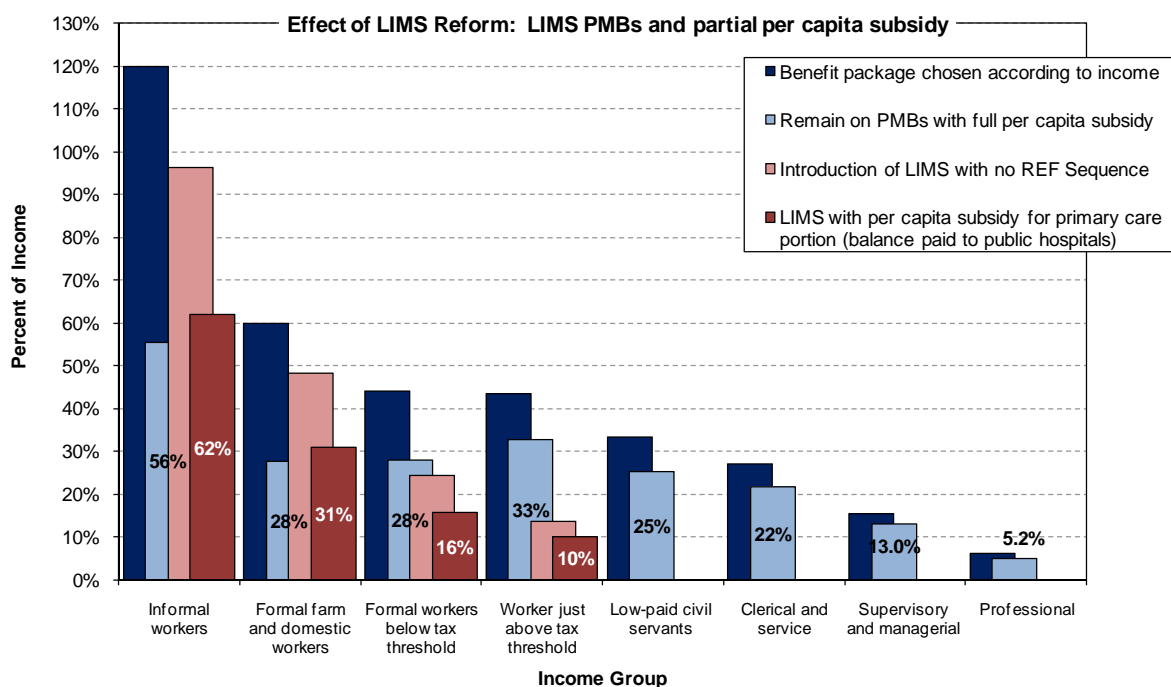
As the LIMS package envisages public sector hospitalisation for all events except maternity, it is not realistic to expect that the full per capita subsidy would be available to LIMS options. McLeod & Grobler argued that the Government Subsidy per annum was R1,300 in 2005 Rand terms and adjusting for inflation (using CPIX) gave R1,450 in 2007 Rand terms. The direct per capita subsidy was thus set equal to this amount: R1,450 pbpa or R120.85 pbpm. It was estimated that LIMS PMBs were 53.4% of comprehensive package for the LIMS age profile, hence LIMS partial subsidy should be R775 pbpa or R64.57 pbpm in 2007 terms.

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<sup>c</sup> Note that this is much higher than the original estimate of R310.50 pbpm in the PMB Preferred Tables. A major part of the difference arises from the actual experience of medical schemes on the hospital curves for PMBs. A study using 2008 data found that actual PMBs were roughly 31% (nearly one-third) higher than was originally estimated. See reference 6 for the full report. The estimate quoted above also contains loadings for solvency and administration costs, which were not included in the PMB Preferred Tables.

<sup>d</sup>

The impact of the introduction of LIMS, compared to remaining on PMBs is shown in the graph below. The graph shows that families just below the tax threshold would be faced with spending 44% of income on a conventional medical scheme. The replacement of the current tax break for medical scheme membership with a per capita subsidy improves their position from 44% of income to 28%. The introduction of LIMS with a reduced per capita subsidy for only the primary care portion could reduce the cost to 16% of income for this family. By comparison, in section 5 of Policy Brief 9<sup>10</sup> the introduction of the Risk Equalisation Fund (REF) simultaneously with income cross-subsidies continues to lower contributions to 22% of income.



**Figure 4: Impact on Affordability of LIMS Minimum Benefits compared to PMBs**

LIMS achieves good results for workers just above and just below the tax threshold largely due to reduction in direct package cost compared to what they were buying: R719 compared to R1,960 for family of four. However the results for the two lower income groups, informal workers and formal farm and domestic workers are worse than remaining on a conventional medical scheme with a per capita subsidy.

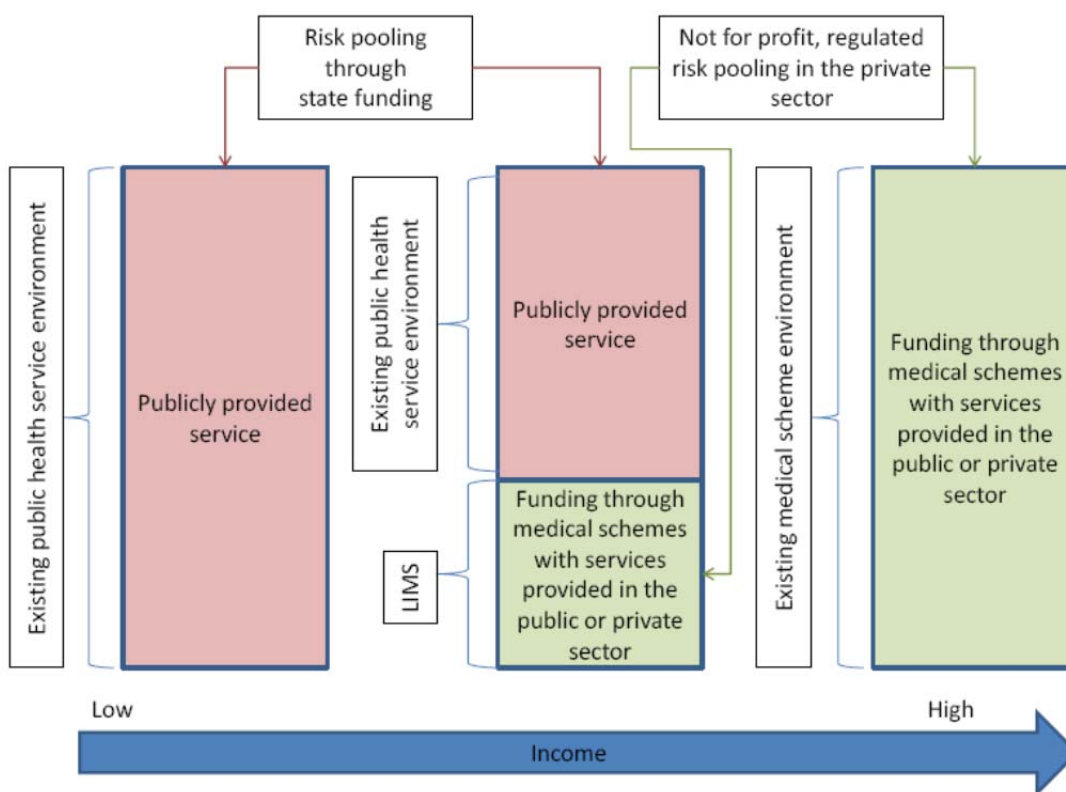
Note also that hospital cover has changed from private to public and it has been assumed that all public sector benefits have been paid from the remaining portion of the subsidy. However if UPFS is charged directly to the scheme then the relationships will no longer hold.

The graph also illustrates that if LIMS is introduced without any of the REF sequence (i.e. in the first instance no per capita subsidy), then the two lowest income groups are almost as badly off as being in a medical scheme without a per capita subsidy. The consequences of LIMS are thus shown not to be straightforward and that the sequence of reform is as critical as for conventional medical schemes.

There was a suggestion in the LIMS report<sup>1</sup> that LIMS needed its own REF pool. The technique illustrated above can be used to investigate trajectories for REF implementation for LIMS in order to put hard evidence on the table when discussing this possibility with policy-makers and stakeholders.

## 6. Integrating LIMS with the Public Sector and Health Insurance

Government did not present any formal response to the LIMS proposals, which were completed in 2006. The only indication of the Government response is in the PMB Review process which was led jointly by the Council for Medical Schemes and the Department of Health<sup>12</sup>. The most recent document argues that there should be a separate LIMS package, saying “A separate dispensation must be established for low-income earners.” The conceptual model for the interaction between the public NHS, LIMS and medical schemes is shown below.



**Figure 5: Access to Essential Healthcare.**

Source: Council for Medical Schemes PMB Review Process<sup>12</sup>

Enabling legislation was included as a one-line provision in the Medical Schemes Amendment Bill of 2008<sup>13</sup> but this Bill was not dealt with in Parliament due to strong representations from organised labour and civil society. The enabling legislation that had been submitted was as follows:

Amendment of section 67 of Act 131 of 1998, as amended by section 28 of Act 55 of 2001 and section 3 of Act 62 of 2002

(b) insertion after subsection (1) of the following subsection:

“(1A) The Minister may prescribe variations from the requirements of the regulations prescribed in terms of subsection (1) to be applied to medical scheme products which cater specifically for low-income persons, provided that the variations so prescribed are—

(a) reasonably necessary to create conditions for the emergence of such medical scheme products in the market; and

(b) in the best interests of low-income consumers.”.

## 7. Extending the Proposed Equitable Subsidy Framework

In Policy Brief 16<sup>3</sup> the International Labour Organization (ILO) policy on the use of multiple financing mechanisms<sup>14</sup> is presented. The ILO policy argues for the pragmatic inclusion in the national health system of all forms of healthcare financing, including tax-funded National Health Service (NHS) delivery systems; mandatory social health insurance financed by employers and workers; mandated or regulated private non-profit health insurance schemes; and mutual and community-based non-profit health insurance schemes." An important component of the plan to enhance universal coverage through a mix of these mechanisms is to determine "the rules governing the financing mechanisms for each subsystem and the financial linkages between them (also as financial risk equalization between different subsystems).

In Policy Brief 16<sup>3</sup> a suggestion was made for a mechanism that would link the NHS and private health insurance funds (medical schemes or similar) in a common subsidy framework (see section 7 and particularly Figure 5 in Policy Brief 16). That model can be readily extended to accommodate other subsystems of the health system. Policy Brief 15<sup>15</sup> outlined a number of forms of workplace health, including Bargaining Council schemes, while the LIMS options or schemes have been covered here. The diagram overleaf is therefore an attempt to link all of these subsystems in a common subsidy framework in South Africa.

The diagram shows taxes being raised from the population (by SARS<sup>e</sup>) and becoming available as Government funding. The amount determined to be needed for healthcare could conceptually be paid to a National Health Solidarity Fund and then allocated to the various subsystems. As discussed in Policy Brief 16, this does not require a separate fund and could be a notional allocation exercise by National Treasury. The allocations for the provincial NHS are to be risk-adjusted by National Treasury from April 2011.

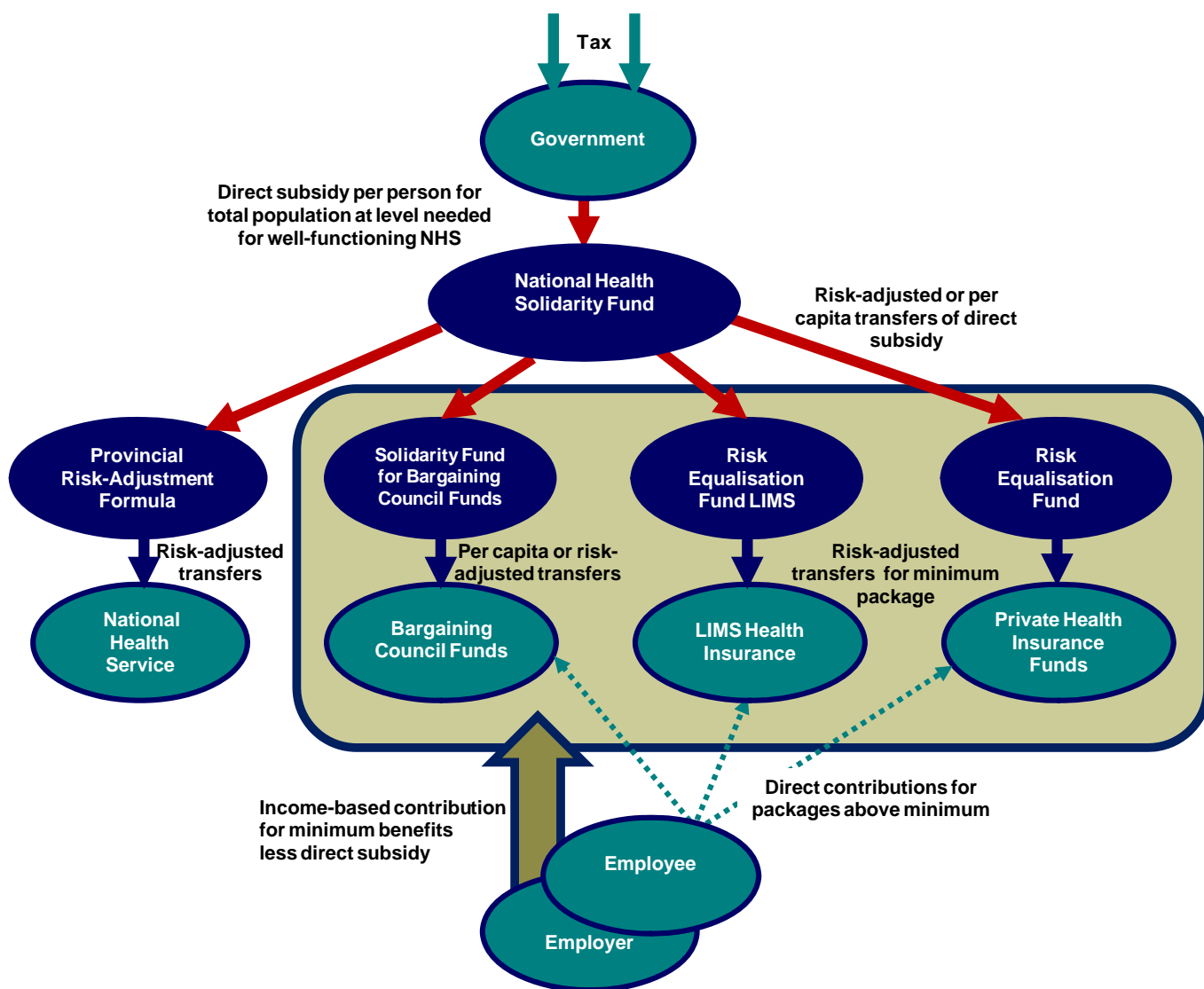
The allocations to the Risk Equalisation Fund (REF) for medical schemes and similar bodies for LIMS options (or schemes) and Bargaining Council schemes are shown. Each of these could then adopt a different approach to the risk-adjustment formula in paying to their respective funds. The envisaged formula for the REF<sup>16,17</sup> requires extensive data on chronic disease in order to deal with the highly competitive behaviour of open medical schemes. The formula envisages the following risk factors:<sup>18</sup>

- Age last birthday on 1 January, summarised into age bands Under 1, 1-4, 5-9, 10-14, ..., 75-79, 80-84, 85+.
- Gender (recommended for inclusion from 1 January 2007 but not yet implemented);
- The 25 PMB Chronic Disease List (CDL) conditions. Where a beneficiary has more than one chronic condition the fund may select the most expensive of the conditions.
- HIV/AIDS provided the beneficiary is receiving anti-retroviral therapy according to national guidelines;
- An additional factor for multiple chronic conditions with provision for 2, 3, or 4+ simultaneous chronic conditions; and
- A retrospective factor for maternity events, defined as the delivery of a single/multiple foetus, either stillborn or alive.

If all the funds were union, industry or employer-based, as with Bargaining Councils, then it is feasible to agree a much simpler approach. The funds could either be allocated on a per capita basis or on a simple risk-adjustment basis using only age and gender.

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<sup>e</sup> The South African Revenue Service (SARS) lists all the tax types as follows: Air Passenger Tax (APT); Capital Gains Tax (CGT); Diamond Export Levy; Donations Tax; Estate Duty; Excise Duties and Levies; Mineral and Petroleum Resource Royalty; Income Tax (IT); Pay As You Earn (PAYE); Provisional Tax; Retirement Funds Tax; Secondary Tax on Companies (STC); Securities Transfer Tax (STT); Skills Development Levy (SDL); Stamp Duty; Transfer Duty; Turnover Tax; Uncertificated Securities Tax; Unemployment Insurance Fund (UIF); and Value Added Tax (VAT). See <http://www.sars.gov.za/home.asp?pid=161>



**Figure 6: Financial Linkage between Multiple Healthcare Subsystems in South Africa**

The LIMS recommendations<sup>1</sup> suggest that LIMS needs its own risk-adjustment pool. This is due to the need to have separate benefit packages in different equalisation pools. It may also be possible to use a simpler formula for risk-adjustment which includes (say) age, gender and a single chronic-disease marker or HIV/AIDS.

Community-based and micro-insurance financing for health has not been a major feature in South Africa, it may become a vehicle for harnessing contributions amongst informal workers<sup>f</sup>. It is conceptually possible to extend the diagram to accommodate micro-insurance schemes for health as well.

It is critical, as was demonstrated in Policy Brief 12<sup>11</sup> that risk-adjustment for medical schemes not be implemented without simultaneously introducing income cross-subsidies. If these are not implemented simultaneously, there will be very adverse consequences for lower income families on medical schemes. As section 5 has shown, LIMS members are also better off if there are income cross-subsidies. Does this mean that LIMS is not needed and that LIMS members could be better off in medical schemes with substantial income cross-subsidies?

<sup>f</sup> See for example <http://www.microinsuranceacademy.org/about> and <http://www.microinsurancenetwork.org/network.php>

In Figure 6 a box is drawn around all three types of funds that employees and employers might access. From the analysis of the impact of reform on members<sup>5,11</sup> it is likely that the lowest income workers will be better off in a single income-cross-subsidy pool. The larger the package of benefits pooled, the better off the lower income workers will be. But there comes a limit as to the extent to which income-cross-subsidies can be pushed and the extent to which middle and higher-income workers can cross-subsidise the much higher numbers of lower income workers<sup>10</sup>.

The answers are not straightforward and require further technical work to be done on the degree of solidarity that it is possible to engineer into the environment. Some preliminary work was done on the solidarity needed for PMBs and BBPs in medical schemes for the 2005 recommendations to Cabinet<sup>2</sup>. That work was updated in considering the linkages of health reform and retirement reform and the kinds of subsidies needed for health for pensioners<sup>19</sup>.

This is the area where most research effort now needs to be focussed: what degree of solidarity will South African income earners be able to tolerate and participate in? And what are the impacts on families of different types (for example, single mothers, large families with two working parents, couples with one income and no children)?

However even if LIMS members are shown to benefit most from being part of a greater risk pool with a common benefit package and high income cross-subsidisation, there may still be good reasons to introduce a separately branded form of health insurance. This is analogous to the Mzansi bank account initiative<sup>20</sup> or the new Zimele initiative for insurance<sup>9</sup>. Making a clear difference to existing medical schemes may be useful not only for consumers but also for healthcare providers who may be asked to contract differently to the ways they do in medical schemes, making more use of capitation contracting for primary and some specialist care. Rather than have LIMS only offer hospitalisation in what is now an overburdened public sector, it could be useful to allow the private hospital groups to compete for the LIMS business, thus encouraging a greater use of DRGs<sup>21</sup> and other risk-sharing payment mechanisms.

A further important issue that still needs to be explored is whether the transfers from the National Health Solidarity Fund should be made to the subsystems on the basis of a per capita allocation or whether this should be on a risk-adjusted basis. The people covered in the NHS are generally younger and so a formula based on age and gender will favour the working group in the income-cross-subsidy box. However if HIV/AIDS is included as a risk factor then the risk-adjustment will probably move in favour of the NHS. This needs further work on potential risk factors and models of the interactions before firm recommendations can be made.

We are told that NHI as envisaged by the ANC in September 2010<sup>22</sup> is to be implemented perhaps in 14 years time. We cannot simply allow the current problematic healthcare financing arrangements in South Africa to continue for that length of time (or longer). In the opinion of the author we should be using the ILO framework to be looking for ways to improve universal coverage using all the subsystems we have available. While the work is still at a conceptual stage, the diagram showing the financial linkage between the multiple healthcare subsystems could provide a way forward.

I look forward to others taking this work forward and developing mechanisms to improve financial solidarity and universal coverage for all South Africans.

Produced for IMSA by  
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<sup>9</sup> Zimele initiative: <http://www.ifaonline.co.uk/cover/feature/1930455/products-people>

## Resources on the IMSA Web-site

The following is available on the NHI section of the IMSA web-site: [www.imsa.org.za](http://www.imsa.org.za)

- The slides and tables used in this policy brief [PowerPoint slides].

As the purpose of this series is to put in the public domain material and evidence that will progress the technical work of developing a National Health Insurance system, we would be delighted if you make use of it in other research and publications. All material produced for the IMSA NHI Policy Brief series and made available on the web-site may be freely used, provided the source is acknowledged. The material is produced under a Creative Commons Attribution-Noncommercial-Share Alike licence.



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