

BHF POSITION PAPER ON HEALTH CARE REFORMS

October 2003

1. The aim of this paper is to present the position of the Board of Health Care Funders (BHF) on legislative reform in health care. The paper focuses on current topics of discussion, such as risk equalisation and reform of tax deductions for medical expenses as well as mandatory cover. In describing the BHF position, we commence with an overview of recent health care reforms, perceived successes and failures of private sector health care in South Africa, and an evaluation of overall health care policy direction, as enunciated in various publications by the Department of Health. Given the bodies that it represents, this paper focuses on the role of private health care funding in South Africa, although always in the context of its broader involvement in health care in South Africa, and its relationship with public sector health care delivery and finance.
2. The author of the paper is a consulting actuary at B&W Deloitte. The views expressed in this paper has been reviewed and put forward by BHF as offering a perspective on health care reforms which is worth debating.
3. The paper should be read as a whole as parts taken out of context may be misleading.
4. The right to health care is a basic human right, not only in terms of s27 of the South African Constitution, but also in terms of the International Covenant on Economic, Social and Cultural Rights of 1967 (article 12) issued by the United Nations, which, under s231 of the Constitution is now recognised in our law subject to a number of conditions. It is, however, in health care where very frequently a conflict is experienced between limited resources to provide health care services and unlimited demand for such services (from those that are ill – or mostly from them). Health care finance therefore contains inherent tensions. The task of health care finance is to manage these tensions to the best advantage of all role players¹ that play a positive role in delivering health care, and to sustain the delivery of good quality health care for as many individuals as possible.
5. In South Africa, we have had particular challenges in working towards a coherent health care financing system. This includes the extremely unfair distribution of health care resources and services as a result of injustices of the past (see for instance that classic work of economic analysis, Wilson & Ramphela's *Uprooting Poverty – The South African Challenge*, where in 1990 the shortcomings of our health care system were defined as the unequal distribution of resources and the lack of a national health system). It is therefore inevitable that a major tenet and legislative direction of post-apartheid legislature remains health care and its delivery. This was very necessary then, and continues to be necessary almost 10 years into our new democracy.

¹ It may seem more appropriate to say here to the best advantage of patients, rather than role players, but by managing tensions to the best advantage of all role players (including service providers), the health care financing system ensures that all role players have some reason for continuing their participation in the system. The statement presumes that role players add value to the system, which is of course not always the case in practice, and should not be understood in the sense of including those taking advantage of the system.

6. Having said this, it is clear that the health care finance environment is a hypersensitive environment, with many role players who have different incentives influencing outcomes. Legislative reform, necessary as it is, should avoid instability in this sensitive environment, as instability can quickly lead to unintended outcomes. It is therefore worthwhile to take into account the incentives of different role players in discussing alternatives of health care reform. A successful health care financing system would be one that aligns the incentives of role players to achieve the same desirable objective: affordable health care delivery to all. Regulatory control should avoid the creation of perverse incentives – which happens all too easily in a market as complex as the South African health care market.
7. In the rest of this paper, many of our arguments will be set against the background of the incentive analysis below. For the sake of clarity, we focus on the incentives of the most important players in the private health care sector- excluding the Regulator, who should objectively view these incentives “from above” when making decisions on health care finance, rather than acting as a role player with particular incentives in this context. The following analysis summarises the different incentives of different role players:
 - a. Administrators:
 - i. Administrators are profit driven: often receive a fixed fee per member per month.
 - ii. Administrators maximise profit for owners / shareholders by either maximising membership and / or minimising costs and / or maximising fees.
 - iii. Other than pressure from Trustees, administrators often do not have incentives to control actual medical costs *per se* (here we are considering for instance the incentive to reduce fraud, not managed care savings, which are discussed below), the only sanction being the possible loss of the administration contract. Termination of an administration contract inevitably leads to administrative difficulties for members and requires high involvement from Trustees, and hence is not a strategy followed by Trustees unless there is no other course of action.
 - iv. An administrator which is successful in controlling costs, will find itself in a difficult situation where its costs, as a percentage of total contributions, increases, and this will place that administrator under increasing pressure from the Regulator to decrease administration fees (see frequent reference in the annual report of the Registrar to administration costs as a percentage of contributions, and the need to control this ratio – e.g. p. ??? of the 2003 report).
 - v. Hence administrators probably aim to strike a balance between *too* efficient control of costs and costs that spiral out of hand – the latter to ensure that they maintain their administration contracts, the former to ensure that they maintain their income as a percentage of overall costs – and the successful negotiation of this balance may be regarded as their ultimate aim.
 - vi. The latest report from the office of the Registrar expresses concern at the fact that larger administrators do not seem to benefit from synergies and hence charge higher fees (annual report, p ???). Administrators are incentivised to grow, but this leads to higher complexity in co-ordination between different departments (particularly membership / contributions and claims) and also requires more sophisticated systems, which in turn

leads to higher costs – see our analysis below on the fallacies of administration synergies.

- vii. Administration monitoring can lead to perverse incentives: e.g. speed with which claims paid out often measured in SLAs – this leads to administrators financially rewarding assessors on the basis of number of claim lines assessed, which in turn causes errors (unless there are good systems control) or leads to assessors forcing through claim lines (e.g. manipulation of claim dates to force through duplicates) or removes the incentive for assessors to identify padding of claims.

b. Medical service providers:

- i. Medical service providers have two major incentives that are completely aligned in a fee-for-service environment, such as ours predominantly still is, namely to maximise income and to provide the highest standards of medical care².
- ii. They therefore pad claims, over-service, submit fraudulent claims, collude with member
- iii. Most often, service providers have no idea of the cost of treatments or medication prescribed by them.
- iv. Especially where service providers feel aggrieved by managed care controls, limits, tariffs
- v. Also committing fraud against large medical schemes viewed to have “deep pockets” in the interests of members whose cover have run out
- vi. Other incentive: avoid malpractice charges, hence do all possible tests & specialist referral to avoid charges of negligence.
- vii. Constraint on incentives: Honesty and fear of getting caught? More recently, peer review and performance based reimbursement have had varying levels of success in providing incentives to control costs. Of course, capitation fees, where it can be implemented successfully (i.e. where there is a large enough risk group to allow the service provider to take on risk and where the capitation fee is appropriate) also has the potential to curb service provider costs, but has rarely been successful in South Africa for a number of reasons.

c. Members:

- i. Members do not see the direct benefit of claiming lower amounts (e.g. for a generic rather than patent medication) unless they are in danger of breaching benefit limits. Members may be more careful with medical expenses when claiming from personal savings accounts, but opinion often differs on whether this is actually the case.
- ii. Members often do not know that it is possible to incur lower costs since they are not informed of alternatives. As such, they are not in a position to argue with service providers for lower cost treatment. They are also often not informed enough to determine whether they need particular services or not, and hence cannot argue against over-servicing.

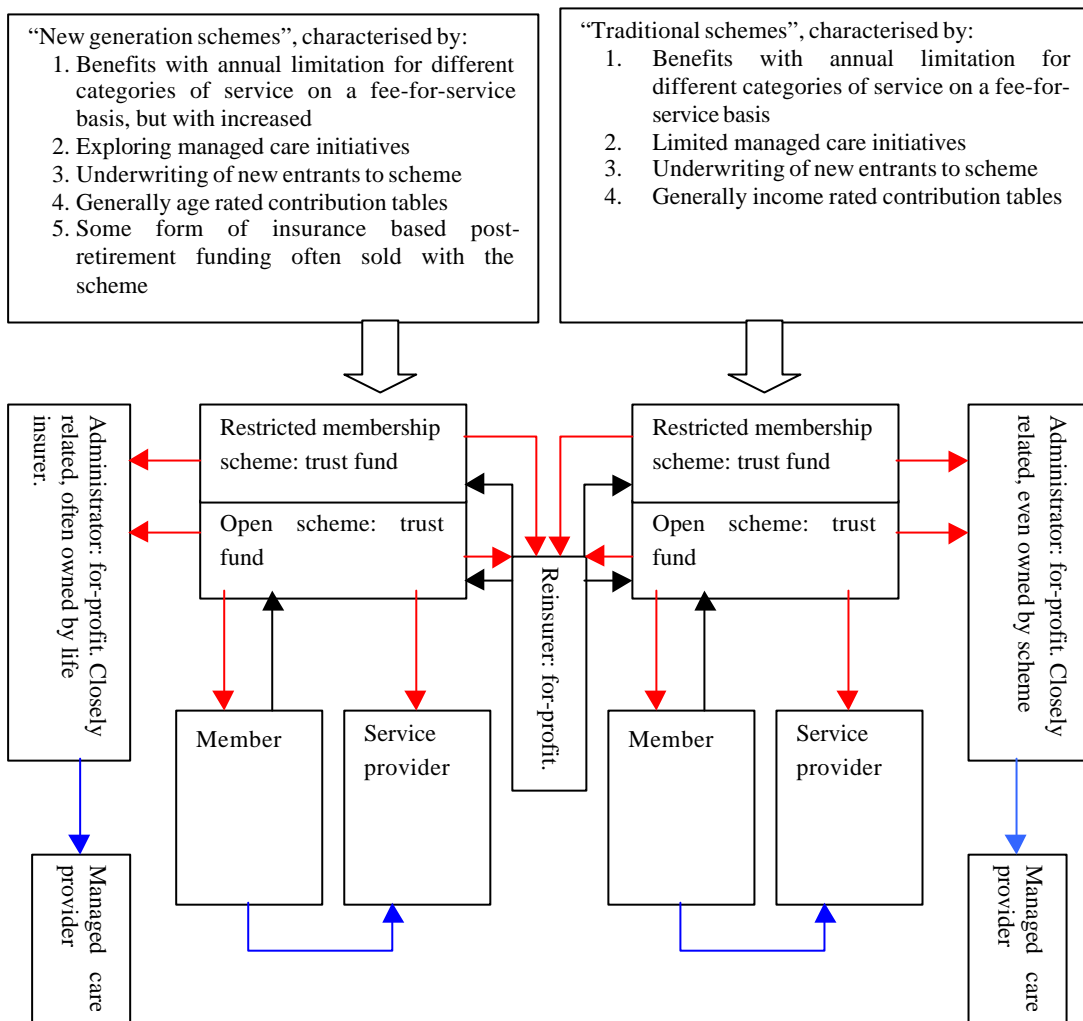
² For some unscrupulous providers, the maximisation of income goes beyond getting paid for services provided – such providers aim to get paid for *more* services than provided. This is fraud, and takes many forms in practice, and need not concern us here other than reiterating that such service providers should be prosecuted and that the inability of the system to identify them (where relevant) should be a major cause of concern.

- iii. Members are generally not interested in community rating (i.e. contributing more than they claim), and often claim specifically where they feel aggrieved at having received less benefits than they contributed for.
 - iv. There is a high incentive for members to anti-select: i.r.o. benefit options and scheme membership, especially where the sanctions against anti-selection are weak, as in our current legislative framework.
 - v. There is some incentive to collude with service providers where members need cash (e.g. card farming) and where they feel they do not get value for money. The only constraint is fear of getting caught, which up to now has been somewhat lacking, given the difficulty of identifying fraud where there is collusion.
- d. Managed care providers:
- i. Similar aims to administrators: maximise fees
 - ii. Also incentivised to overstate savings – both before getting appointed and thereafter
 - iii. Introduction of compulsory diagnostic data will help enhance the role of managed care, but at a cost, which may or may not be recovered through subsequent savings.
- e. Brokers:
- i. Aim to maximise income i.e. commission
 - ii. Aim to minimise work – hence prefer administrators with good reputation and track record, and schemes with adequate benefits.
8. This brief incentive analysis indicates that it is extremely important to ensure that, in any health care system, incentives are aligned to achieve desirable objectives. If incentives are not aligned, it does not mean that all role players will act unethically or against policy objectives (we would like to believe that most role players in the market do in fact want to operate ethically), but rather that the minority of unscrupulous role players have the opportunity to act against desirable social objectives and hence thwart the effectiveness of the health care financing system as a whole³. The analysis above should therefore not be viewed as presenting a particularly jaundiced view of the industry, but the aim is rather to point out the opportunities and the incentives that role players currently have to act in such a way that sustainable health care delivery for all remains elusive. We have not discussed the incentives of parties such as the public sector, industry bodies such as the BHF, the Office of the Registrar, SAICA or the Actuarial Society of South Africa, but rather focused on those parties that are directly involved in the private health care equation, rather than influencing it from the outside.
9. [NB Perhaps add incentive analysis for public sector????] Public sector wants to keep up service delivery, have some control over financial destiny, wants to retain staff, wants to avoid bad publicity, improve working conditions, get access to required resources etc.

An overview of recent legislative reform

³ The famous 20/80 rule of thumb springs to mind: 20% of role players abuse the system and cause 80% of the cost spiral

10. In this section of the paper, we discuss our views of recent health care reforms in South Africa. The three major documents enunciating these reforms are the Medical Schemes Act of 1998, as amended (the Act), the Regulations published under the Act and aspects of the Taylor Committee report on health care (ref?????)
11. Following the dawn of democracy in South Africa in 1994, talk about significant health care reforms commenced in 1995, with the aim of promulgating a new Medical Schemes Act. The contents of these reforms has been continuously debated since then, and the aim of this section is not to re-state what should be common knowledge, but merely to highlight the major elements of the reform.
12. There are a number of central tenets emerging from the legislative framework, namely:
 - a. Open enrolment and guaranteed acceptance: medical schemes have only limited capacity to underwrite and exclude members on the basis of health or some other ground.
 - b. Community rating: contributions may not be risk rated – differentiation on the basis of benefit structure, income and number of dependants is allowed, but no other form of rating
 - c. Governance: placing a greater distinction on the role of the administrator vs the role of the Trustees, and insisting that the principal officer should be independent from the administrator. Also, implementing more detailed requirements relating to audit committees, the quarterly submission of returns, and imposing certain solvency requirements.
 - d. Prescribed minimum benefits (PMBs): recently the cover in respect of PMBs had been greatly enhanced, to the extent that schemes now have to offer unlimited cover in respect of a number of conditions (for treatment, care and diagnosis) in *any* setting from 1 January 2004 (previously cover had been limited to public sector provision), the only limitation being the use of some managed care tools within strictly defined parameters.
 - e. Extending cover: ensuring that people who can afford it can get access to cover by offering guaranteed acceptance in an environment of community rating and PMBs, thus making them less dependent on public sector facilities
 - f. Supporting managed care initiatives: this is especially true of the latest round of regulations, where managed care concepts are given considerable prominence
13. It may be useful to graphically present the pre-1998 health care environment, and then track changes to this environment with the introduction of new legislation. A graphic representation such as the one below naturally simplifies matters, but nevertheless highlights the main features (red arrows indicate flow of funds out of the scheme and black arrows indicate flow of funds into the scheme, blue arrows indicate flow of fund between parties external to the scheme):



14. After 1998, the health care environment consolidated to a large extent. There is currently less distinction between traditional and new generation schemes, as many schemes offer both types of benefit options, and market players initially strongly opposed to the use of savings accounts have almost without exception introduced it in at least some of the options in schemes. In addition, age rating has been outlawed, and extensive restrictions have been placed on the use of savings accounts and underwriting. More extensive managed care initiatives and development of administration systems have also been implemented. Large increases in administration cost as a percentage of premium have been the order of the day. Recently, the use of reinsurance has also been severely curtailed by the Regulator, to the extent that it can be regarded as practically non-existent in the current market.

15. The success of these measures has been extensively discussed and debated. It is not our aim to debate whether legislation has been successful or not in this paper, but we wish to highlight a number of consequences of the legislation so that future and planned reforms can be placed in the correct context given the health care environment in South Africa. These consequences are discussed in Appendix 2?????? [decide whether to insert: main tenets include improvement in governance requirements, high contribution increases (not the only determining factor of course – but solvency requirements major one), reduction

in risk protection (reinsurance vs capitation vs underwriting), reduction in restricted membership schemes due to PRMA mainly. Here we can draw heavily on the work done by Steinberg and Doherty. From this analysis, we identify a number of fundamental driving forces in South African health care since 1998. These driving forces and the above incentive analysis then underscore our evaluation of suggested new health policy reforms.

Driving forces in South African health care

16. Administration – fallacy of synergies – how failure leads to scheme failure
17. Managed care – requirement for bargaining power and increasingly complex systems (PMBs)
18. Mismanagement and lack of good governance
19. Stringent solvency measures coupled with no sources of capital other than contribution increases or, to a lesser extent, benefit cuts
20. Restricted vs open schemes – reduction in the number of restricted schemes due to AC116 and employers not wanting to take on burden of legislative complexity. Hence movement into open schemes, which puts pressure on solvency, hence high increases required
21. Recognition of PRMA liabilities – employers move away from percentage subsidies and post-retirement subsidies (results of OM report NB!) and hence cover increasingly unaffordable therefore members downgrade hence overall contribution income does not increase by as much as would be expected.
22. Broker activity – churning to highest commission paying schemes
23. Competition. For some members! No overall growth in market.
24. Legislative reforms – see above.
25. Having considered the legislative background and general driving forces within the South African health care market, we turn our attention to current legislative reform. Whilst the main aim of this paper is to establish the BHF position on risk equalisation and tax reforms (coupled with mandatory cover), a critical element of the debate is prescribed minimum benefits – an extension of which is to be introduced in 1 January 2004. We therefore first turn our attention to the risks posed by the legislation relating to prescribed minimum benefits.

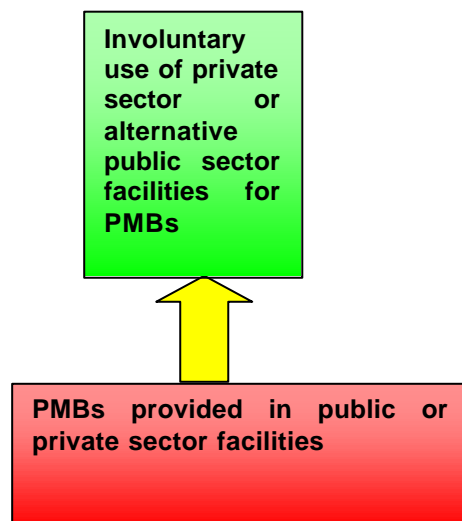
Prescribed minimum benefits

26. In this section of the paper, we discuss the changes to the medical scheme environment brought about by the legislation on prescribed minimum benefits. The main aim of the

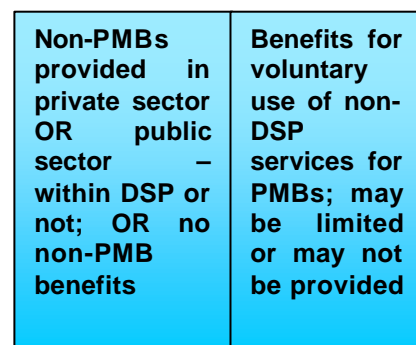
Regulations relating to prescribed minimum benefits (PMB) is to extend the level of basic cover offered to medical scheme members. The reader is referred to the relevant clauses in the Regulations of November 2002 for full details – what follows is a brief summary for ease of reference.

27. PMBs can be defined as benefits in respect of:
 - a list of 270 conditions / groups of conditions for which diagnosis, treatment and care have to be provided according to pre-determined algorithms, and
 - a Chronic Disease List (CDL), which consists of 25 conditions
 - any emergency medical condition
28. Under Regulation 8, schemes have to provide for the “full cost” of the treatment, diagnosis and care of all of these conditions under all benefit options with no limit, no co-payment and no deductible (PMBs may also not be covered out of medical savings accounts).
29. Schemes may choose to have designated service providers (DSPs) for PMBs – a network of medical service providers, and this may be a public hospital network. Members who “involuntarily” obtain services outside the DSP network, will receive payment in full for services rendered. Schemes are allowed to implement treatment protocols, pre-authorization and other cost control measures.
30. The PMB framework can be summarized graphically:

Compulsory cover:



Non-compulsory cover:



31. In other words, all schemes have to offer cover for PMBs, and some may choose to enter into an agreement with the public sector as a DSP for such cover (although this is not preemptory). It would then be **compulsory** for these schemes to provide additional cover. The green block on the left hand side of the line is the minimum additional cover that has to be provided by such schemes. Schemes may then place limits, as they currently do, on

the voluntary use of non-DSP facilities, or not provide such benefits at all. In addition, schemes may offer non-PMBs in any sector, subject to limits as they may specify.

32. Given the above, the involuntary use of non-DSP service providers in respect of PMBs is one element that introduces new risks to schemes, as most schemes, with the exception of some low cost options in some schemes, would currently be providing cover not very much out of line with at least the red and the blue blocks above. The question therefore is whether involuntary use of non-DSP facilities represents a major risk. In particular:
- a. Private providers who see patients who make voluntary use of their services would have no added incentive to misrepresent a non-PMB diagnosis as a PMB diagnosis, given the above model
 - b. Private providers who see patients who make involuntary use of their services *would* have a perverse incentive to engage in fraudulent behaviour
 - c. Whether such instances would be sufficiently limited would depend on:
 - i. The extent of the DSP network, in terms of geographical spread, the range of services provided, and the quality of those services
 - ii. The geographic spread of members and the extent to which *administrators or managed care organisations* would be in a position to argue convincingly (where relevant) that members do not live unreasonably remote from facilities, that services were not of an unreasonably poor quality or that there were no unreasonable delays in the provision of services
 - iii. The extent to which the availability of these facilities and treatments are guaranteed in a contract with the DSP, and the willingness of potential network partners to enter into agreements containing such guarantees
 - iv. The extent to which accurate diagnostic and treatment data is collected even within a network arrangement – without such data it would not be possible to apply a sensible treatment protocol for the involuntary use of non-DSP services. It may be particularly difficult to collect data in a capitation agreement where most or all of the risk had been passed on to the service provider.
 - v. The extent to which the administrator and managed care organisation are successful in limiting costs for involuntary treatment via a treatment protocol – including the collection of accurate data (which may imply that the service provider would have to be incentivised to provide such data), the linking of diagnostic and treatment data for the same individual between different service providers (both network and non-network) and the build-up of a medical history for every beneficiary, including the individualisation of a treatment protocol if medically justified.
 - vi. The effectiveness of tools such as pre-authorisation, case management, provider profiling and so on. Schemes are allowed to impose “reasonable and feasible” (Council circular) penalties on members or service providers who do not follow managed care provisions when services are provided in respect of involuntary use of non-DSP facilities for PMBs.
 - d. In other words, the risk of involuntary use of non-DSP services would be limited if the DSP has a wide footprint given the distribution of members, if members and beneficiaries stay reasonably close to such facilities, if contracts guarantee bed availability and outpatient care availability, including availability of medication for all 295 conditions and all possible emergency situations, as described in the PMBs, if the network collects accurate diagnostic and treatment data, and shares that with the scheme, if the scheme is in a position to effectively

implement individualised treatment protocols and identify fraudulent cases of services being put forward as relating to involuntary use of non-DSP services, and if schemes are in a position to effectively use managed care tools.

33. There may be schemes and / or administrators who are in a position to comfortably meet the requirements set out above – in which case the new legislation would not lead to much additional complexity for such schemes and / or administrators. Nevertheless, we also know that there are market players who cannot easily meet these requirements. Those that may experience particular difficulties are small schemes or administrators with members distributed nationally (by small we mean any scheme with, say, less than 30 000 members) – who will find it difficult to include the full spectrum of services (e.g. specialist services) within a network agreement, be it capitated or not. In the context of full spectrum capitation, membership requirements may be even higher. Smaller schemes or administrators may of course combine forces on network agreements with other schemes or administrators, which may help alleviate this problem. Others that may experience difficulties are those administrators, large or small, who do not have the advanced systems required to administer complex treatment protocol assessment and interactive diagnostic-based authorisation. This would be compounded by uncertainty about how to assess claims or do pre-authorisation relating to the involuntary use of non-DSP facilities until such time as guidelines have emerged through the development of precedent after application of the provisions in Regulation 8(3) to specific situations. See Appendix 1 for a more complete analysis of increased administrative and managed care difficulties with PMBs.
34. Schemes who do not designate a service provider network would have to pay for PMBs *in full* in any setting where members make involuntary use of such services, without having the benefit of applying a particular tariff structure. The reason for this is that there may be no co-payments imposed on members for the involuntary use of PMBs, and as such schemes can only apply a tariff structure, such as the current BHF tariffs, if the service provider being involuntarily used for services *agrees* not to charge in excess of such a tariff structure. This implies that all schemes would have to enter into agreements with as many service providers as possible. Having a narrowly defined DSP means that members would be in a position more often to motivate for involuntary use, and this means that the scheme would have to pay more often in full, which would clearly quickly become unaffordable.
35. There is also some concern about schemes that pass on risks to a DSP network via capitation or otherwise, namely the capital requirements and capital management skills of the DSP network. In particular, there is no requirement in the legislation, other than a general provision in the recently published policy guidelines indicating that DSPs should operate on the basis of sound financial principles, to hold adequate capital to address seasonal and random fluctuations. This is particularly important if capitation agreements are entered into by large schemes – if a DSP that services large numbers of members does not hold adequate capital, the impact on members may be severe should such a DSP fail. There are two possible adverse consequences where a DSP holds inadequate capital: a decline in standards of service in the DSP network (which leaves schemes vulnerable to a significant increase in the involuntary use of non-DSP facilities – particularly problematic where such unexpected involuntary use, covered at full cost, had not been priced into contributions), and / or the financial collapse of the network (leaving schemes vulnerable to an unmanaged fee-for-service scenario). There should be an overall risk-based capital approach to solvency requirements for both schemes and DSPs.

36. Having discussed the risks involved in the current formulation of PMBs for 2004, we now turn our attention to risk equalization. As it is one of the aims of risk equalization fund (REF) to equalize in respect of PMBs, the above discussion of PMBs provides some context to the challenges of implementing the REF.

The Risk Equalisation Fund

37. Quote from the DOH rationale for REF.
38. It is evident that community rating and guaranteed acceptance *amongst a defined population* lead to a cost spiral in the absence of some form of risk equalization. One of the main tenets of this section includes some discussion of the requirement for mandatory cover with risk equalization.
39. Starting point is statement in Report of Inquiry into Social Security Aspects of Health, p.63, where it is stated that “Risk Equalisation is a zero sum game”. We believe that this is not true in an environment where members have the option to opt for pure insurance vehicles despite the fact that they have a *perception* of vastly differentiated amenities i.e. public vs. private sector (the perception indicating that they should rather retain their medical scheme cover). Hence, where the costs of risk equalized benefits is perceived to be too high, healthy people will opt out of the system, and the cost of risk equalizing will increase as the more unhealthy members elect to remain behind. This is exactly what happened in Australia (see Appendix 2 for more detail), although the risk equalized health care had less inelastic demand than had been the case in South Africa up to now. Due to the selective withdrawal of members in Australia, they had to introduce stringent penalties for late joiners, which, given the relatively low cost of cover, led to the stabilization of the risk pool.
40. Given our caveats about the cost of PMBs & opportunities for anti-selection and risks, we believe that there is a risk of instability in terms of membership movements: NB here demonstrate increasing age and stagnant membership in industry (despite price inelasticity of contribution cover as noted in Inquiry – p. ???) AND DOWNGRADING: If members cannot downgrade any more, more of them may choose to leave.
41. Note comments in Inquiry report about cream skimming representing a welfare loss to Society – where there are individuals who can anti-select and destroy cross-subsidy liability, they are in fact cream skimming in an individual capacity (or the effect is the same) and hence there is a welfare loss to Society. In other words, community rating, which has the potential to prevent risk selection (cream skimming) at scheme level and hence prevent a welfare loss to society, should not be seen in isolation. Where an individual has the opportunity to anti-select as a result of open enrolment, and is incentivised to do so as a result of the high cost of cover, the risk selection occurs at individual level (i.e. individuals stay out of the risk pool until they need the cover, hence withdrawing their cross-subsidy from the health care equation) and the *same* welfare loss to society is incurred as would have been the case in an environment of scheme-based risk selection. In other words, the prevention of cream skimming is largely ineffective if legislative measures also do not at the same time also prevent anti-selection.

42. Having said this, in the absence of risk equalisation, an environment of guaranteed acceptance, community rating and open enrolment is not sustainable given the free choice of medical schemes in South Africa. This is because anti-selection operates at many levels, not only in terms of joining schemes, but also in terms of option downgrading or upgrading and in terms of benefit selection.
43. Possible solutions are to:
- introduce underwriting; and / or
 - have only one medical scheme or only closed medical schemes; and / or
 - to have risk equalization; and / or
 - to implement mandatory cover
44. From a social point of view, risk equalisation is the most desirable since it prevents a welfare loss to society through risk selection of schemes, whereas underwriting tends to underscore risk selection. However, if risk equalization is implemented without mandatory cover, there is still the possibility for members to opt out of the system altogether and hence to anti-select by acting against the solidarity principle. This is a problem *despite late joiner penalties* where the alternative to the private health care system is perceived to offer services of vastly inferior quality, since ill members will then not be deterred from paying late joiner penalties in order to join the private health care risk pool at a later age when they feel their expenditure would justify this expense. In fact, it can be stated that late joiner penalties may *aggravate* the impact of anti-selection where there are large differentials between private and public sector standards of health care, since it would be only those that are really ill that would pay the penalties in order to join the risk pool. In other words, where risk equalization is not implemented with mandatory cover, it is essential that underwriting be allowed *in addition to* late joiner penalties to prevent this sort of anti-selection. This may be a problem where there have been social inequities making it historically unaffordable for people to join medical schemes. This can be dealt with by amnesty periods (as has been introduced in the past) and / or by *income rated* late joiner penalties and underwriting. In other words, where people could not join private medical schemes in the past due to unaffordability of contributions, the late joiner penalties or underwriting imposed on them would not be as severe as the late joiner penalties or underwriting imposed on high income individuals.
45. Having said all of the above, it therefore seems that risk equalization in respect of PMB's is desirable from a number of perspectives. There are some caveats though, and some of these are illustrated by the following summaries of international risk equalisation practices (refer to Appendix 3 for a more comprehensive discussion of international experience).
46. In Belgium comprehensive health care packages are offered by all funders and health care cover is mandatory. Premiums are minimal - about 2.5 Euros per year in 2001. Age, gender, unemployment, public servant employee, invalidity, mortality, number of dependants and income are all risk equalisation factors. Note that, other than disability status, there are no specific risk equalization factors specifically relating to health status or morbidity.
47. Germany has a complex health care system, whereby 90% of the population are covered by social health insurance and the rest has compulsory private health cover. Comprehensive packages are provided and are legally determined. Risk equalisation

factors include income, age, gender, disability and absenteeism from work. However, the lack of morbidity in the risk equalisation formula leads to diverse risk structures and anti-selection.

48. Israel provides national health insurance for every Israeli citizen, and this cover may be supplemented by top-up private insurance. Comprehensive health care packages are offered by all, and risk equalisation is only applied in respect of five high cost diseases. The Government provides substantial funding for national health insurance and Israelis have low contributions or co-payments.
49. In the Netherlands, compulsory national health insurance is provided for catastrophic risks, compulsory sickness funds provide cover for those individuals with low income and compulsory private insurance top-up provides cover for the rest of the population. Risk equalisation factors include historical costs, employment status, degree of urbanization, disability and age. There are no real managed care measures and hence inefficiencies largely due to the lack of morbidity measures in the risk equalization formula.
50. Lessons from this international experience is that in all of the above countries, risk equalisation is *only* applied in respect of mandatory health care cover – private top-up insurance is not risk equalised. South Africa would therefore be departing from this standard practice if risk equalization is implemented in a voluntary environment. Furthermore, in the absence of a morbidity risk equalisation factor, countries struggle to implement effective managed care programs and health care costs increase continuously.
51. The question is therefore whether we need mandatory cover as a prerequisite for the introduction of risk equalization. The Taylor Commission report contain arguments that there is an inelastic demand for private health care cover and hence there is no need for mandatory cover to ensure stability of the overall risk pool. It is a risky view as the introduction of PMB's are likely to prove expensive for those younger and healthier (not necessarily poorer) individuals who currently belong to low cost options (see, for instance, recent press about increases in 2004). However, it remains to be seen if they will continue to belong to medical schemes given the anticipated high increases in premiums in 2004 (i.e. where they currently belong to low cost options).
52. We do not yet know how schemes will manage to control the costs of PMB's, given the involuntary use of non-DSP's at full cost with no tariffs, and the extent to which members and service providers utilise benefits in respect of the involuntary use of non-DSPs. If a scheme appoints *only* the public sector as DSP, as several have done, it is at considerable risk of uncontrolled costs in 2004 (note also the Council circular where such a strategy was labeled "irresponsible").
53. Given all of the above, our view is that mandatory cover is a pre-requisite for risk equalization in respect of PMB's.
54. Also: may provide further details on concern about cost impact of PMBs (will include quotes on Heather's report indicating that it CANNOT be used for pricing) and also refutation of comments in annual Council report. May also add an example of how PMB pricing done for a particular client, where currently low option, add unlimited cover, take into account managed care interventions, add risk of involuntary use, then arrive at premium. Important points relating to solvency also included, and pricing risks given lack

of capital adequacy assurances from service providers – need for contingency margin given: a) lack of reinsurance and b) the fact that the scheme takes ultimate responsibility for providing cover - how to provide in solvency measure for default of service provider network? Note: default not only financial, but also in terms of services, which again increases risk of involuntary use of non-DSPs.

What should be in the risk equalisation formula?

55. The components of the formula is critical since it determines:
- The complexity of administration – the more elements, the more complex the administration
 - However, the fewer elements, the greater the potential unfairness in allocation of funds to and from the risk equalization fund.
 - The idea is that non-manageable risk factors in respect of PMB’s should be included in the formula, whereas manageable risk factors should be regarded as residual risk and schemes should therefore be encouraged to manage such residual risk costs down.
56. Out of the work of the task team, current suggestions on risk equalization factors may be:
- Age
 - Maternity
 - Chronic conditions (specifically those related to the CDL)
 - Perhaps HIV if the scheme pays for ART
 - Perhaps gender (i.e. it may not be necessary to include both gender and maternity, as these factors may overlap in terms of explaining the risk)
57. The aim of risk equalization is to equalize the reasonably efficient cost of providing PMBs to members across schemes with different risk profiles, where those risk profiles differ as a result of factors which the scheme cannot manage.
58. The following table indicates potential risk factors not covered by the formula, with an indication of whether these risks are manageable or not:

Factor	Exclusion reason
Asset risk	Manageable to an extent
Administration risk	Manageable to an extent
Non-PMB chronic disease	Not manageable
General non-PMB health	Not manageable
Non-PMB benefits	Manageable
Managed care risks	Manageable
Existing solvency	Not manageable in the sense of unequal “starting blocks”
Income	Mostly non-manageable
Region	Mostly non-manageable

59. From the above it is evident that the risk equalization formula may still put some schemes at a relative disadvantage. This is especially true where the comparability of benefits increases as all schemes have to offer PMBs. Putting some schemes at a relative disadvantage through risk equalization means that they have to charge more for the same benefits, and this may result in membership movements away from such schemes given

open enrolment, which in turn leads to solvency problems in the receiving schemes and consequently to further membership movements as those schemes have to increase contributions in order to build up contributions. Hence, because not all risks are covered, and given increased comparability of benefits, there is a good chance that there could be substantial instability.

60. In the following examples, we examined the way in which different risk factors interact in *particular* schemes. This does not indicate what the risk factors should be for the industry, but merely how the risk structures of different schemes may differ (we then make some recommendations on risk factors based on this analysis). Actual scheme data was used for these examples. More detail cannot be provided on the calculations without breaching confidentiality requirements of these schemes.

Example: scheme A

61. Consider a closed scheme with one option, 40 000 members and an intensive managed care strategy.
62. In order to determine the risk factors a Generalised Linear Model (GLM) was fitted⁴. The aim is to statistically isolate the standardised impact of moving one risk factor at a time. An exceedingly good fit to the data was obtained for this scheme, i.e. we obtained very low p-values when testing goodness of fit. This means that the risk factors derived below “explain” most of the variance in claims.
63. The following table provides a summary of the risk factors derived in this GLM. There are confidence intervals around each ratio, provided in Appendix 5. Ratios should be interpreted as follows: a ratio of 2.208 in respect of chronic medication means that beneficiaries who claimed in respect of one of the chronic conditions on the CDL claim, on average, 2.208 times the amount that members who do not suffer from chronic conditions claim, *all other things being equal*. In other words, each risk factor is standardized for the influence of other risk factors.

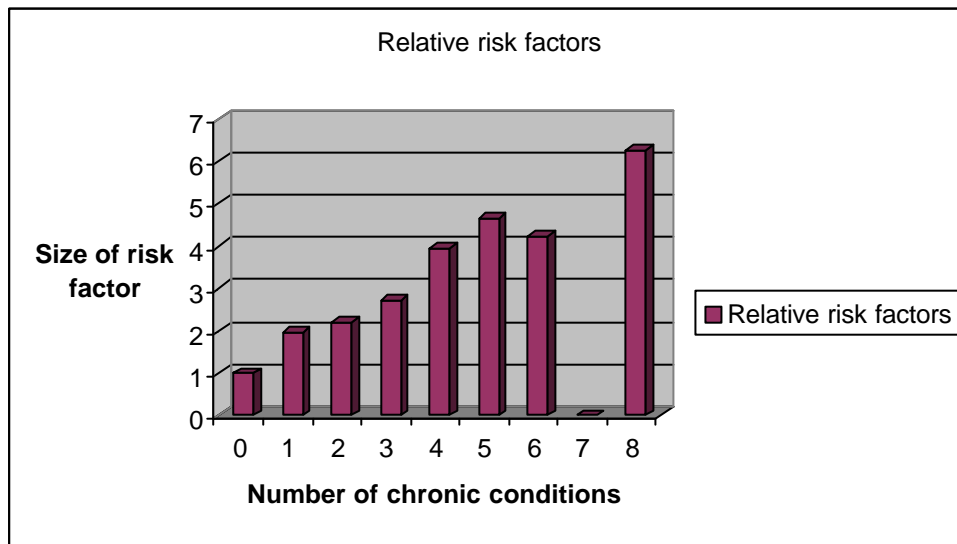
Factor	Ratio	Factor	Ratio
Age: Less than 20	0.256	0 chronic conditions	1.000
Age: 21-30	0.732	1 chronic conditions	1.948
Age: 31-40	1.000	2 chronic conditions	2.187
Age: 41-50	1.143	3 chronic conditions	2.731
Age: 51-60	1.303	4 chronic conditions	3.944
Age: 61-70	1.524	5 chronic conditions	4.671
Age: 71-80	1.681	6 chronic conditions	4.246
Age: Greater than 80	1.293	8 chronic conditions	6.271
Gender: Male	1.000	Non-chronic & Non-maternity	1.000
Gender: Female	0.792	Chronic & Non-maternity	2.373
Chronic	2.208	Non-chronic & Maternity	3.072
Non-chronic	1.000	Chronic & Maternity	4.147

⁴ We found that a Poisson error distribution gave the best fit. Goodness of fit was tested using the F-test.

Factor	Ratio	Factor	Ratio
Maternity	2.344	Non-chronic & Non-psychiatric	1.000
Non-maternity	1.000	Non-chronic & Psychiatric	1.883
Psychiatric	1.845	Chronic & Non-psychiatric	2.214
Non-psychiatric	1.000	Chronic & Psychiatric	3.096

64. Note that the risk factor encapsulated in the phrase “did a member claim once or more for a visit to a psychologist or psychiatrist?” is a *significant* risk factor. Including this risk factor still results in a low p-value in a goodness-of-fit test, indicating that it improves the explanatory power of the model. In addition, maternity and chronic status are also significant risk factors.

65. The graph below shows the shape of the number of chronic conditions factor:



66. Note that the increase in risk arises especially after 2 chronic conditions. It therefore seems to indicate that it may not be appropriate to have a factor which would analyse risk only in respect of 0, 1 and “2 or more” chronic conditions, but that a factor which actually indicates the exact number of chronic conditions would be of greater value.

67. The interaction between risk factors is also important. A beneficiary suffering from chronic conditions and who has visited psychologists / psychiatrists at least once during a benefit year represents roughly 3 times the risk compared to beneficiaries who do not fall into either of these categories. There is also a high interaction between chronic conditions and maternity, and, as expected, risk increases with age.

Example: scheme B

68. Consider a closed scheme with two options, roughly 10 000 members and *without* extensive managed care measures.

69. Due to data limitations only the following risk factors were considered: age, gender, chronic indicator and maternity.

70. As there are two options and the results are shown standardised for the influence of the options. As with scheme A, an exceptionally good fit to the data was obtained.

71. The following table shows the model results for the age risk factor:

Risk factor: Age	Ratio
0 – 20	1.03129
21 – 30	1.03913
31 – 40	0.94578
41 – 50	0.98456
51 – 60	1
61 – 70	1.19076
71 – 80	1.38222
80+	1.58487

72. The above table indicates that risk is *not* an increasing function of age for scheme B, which is completely inconsistent with scheme A, and with general expectations. The younger members of scheme B are clearly not “average” in the sense that they claim more than younger members of scheme A and more than considerably older members of scheme B. The most plausible reason for this is that scheme B offers rich non-PMB benefits, and that, despite it being a closed scheme, membership is voluntary. In addition, cover is fairly expensive. As a result, the younger members who choose to belong to scheme B are members who have anti-selected and who really need the cover, and as such their experience is worse than older members of scheme B and relatively worse than younger members of scheme A.

73. The following table provides a summary of the results for the chronic risk factor of scheme B:

Risk factor: Chronic	Ratio
Chronic conditions	1.71226
No chronic	1

74. It is surprising that, whilst scheme B has *considerably* lower standards of managed care than scheme A, there is a smaller difference between chronic and non-chronic ratios than with scheme A. Again, a plausible explanation for this is that scheme B offers rich non-PMB benefits at a relatively high cost and as such even members who do not make use of chronic benefits still make use of other benefits.

75. The gender and maternity risk factor results were more consistent with scheme A:

Risk factor: Gender	Ratio
Male	1
Female	0.87927

Risk factor: Maternity	Ratio
Maternity	2.43547
No maternity	1

Example: scheme C

76. Scheme C is a closed scheme with three options, 25 000 members and no extensive managed care measures.

77. Due to data limitations only the following risk factors were considered: age, gender, chronic indicator and maternity.

78. There are three options and the results are standardised for the influence of options. As with schemes A and B, an excellent fit to the data was obtained.

79. The following table shows the GLM results for the age risk factor:

Risk factor: Age	Ratio
0 – 20	0.93461
21 – 30	0.90837
31 – 40	0.87893
41 – 50	0.91393
51 – 60	1
61 – 70	1.21973
71 – 80	1.40349
80+	1.53315

80. Again, risk is not an increasing function of age: it is decreasing up to age 40 and then increasing thereafter. This is inconsistent with both scheme A and scheme B.

81. The following table indicates that with less managed care than scheme A, there is still a smaller difference between chronic and non-chronic beneficiary utilisation than in scheme C, but a larger difference than with scheme B.

Risk factor: Chronic	Ratio
Chronic conditions	2.02521
No chronic	1

82. The gender and maternity risk factor model results were consistent with scheme A and scheme B:

Risk factor: Gender	Ratio
Male	1
Female	0.88976

Maternity	Relative risk factor
Maternity	2.43547
No maternity	1

83. Hence, for three different schemes, the standardized risk factors based on GLMs with good fit in each case have different magnitudes and different shapes.
84. Given the above, we believe that risk in respect of PMB's is also influenced by non-PMB benefits. This means that non-PMB benefit levels may also have to be included in the risk equalization formula for PMB benefits in order to arrive at a fair formula for schemes with different non-PMB benefit structures. As a consequence, there is also not necessarily a direct link between managed care efficiency and relative risk factors.
85. Some "unusual" factors may also be relevant risk factors, e.g. whether a beneficiary visited a psychologist or a psychiatrist at least once a year.
86. Note for consideration: further evaluate components of formula. NB link back to elements in US RBC requirements: both are measurements of risks! Hence both should be consistent. The extent to which RBC requirements fall outside RE formula, risk is not equalized in respect of those elements, and members then have to pay for it. Given this, proposed basis on age, gender and chronic conditions (at the time of writing) does not include these other risks as explicitly recognized in RBC formula e.g. asset risk, risk of interdependencies (an issue with capitation and specific service provider arrangements – more detail to be provided). How much variance can be explained by these three factors?
87. NB: Risk equalisation encourages administrators, who benefit directly from having more members, to increase membership at all cost, with no need to consider diluted reserves due to risks of new members (i.e. can sign up all those in hospital and be rewarded for it) and given guaranteed acceptance, RE may further lead to substantial member movements if administrators act in this way.
88. In our opinion there is no reason why underwriting should not be allowed for benefits in excess of PMB's. In the absence of underwriting, anti-selection in respect of "non-essential" benefits is endorsed by legislation. This will put additional strain on a scheme's viability despite risk equalization and hence schemes will tend to gravitate towards PMB only cover. The question is whether it is in members' interest if all schemes provide only PMB cover. We believe that such a restriction of member choice, and cover on the basis of condition that a member suffers from, rather than treatment needed by the member, would not meet member needs.
89. Consideration also needs to be given to the cashflow management of the risk equalization fund. The timing of payments could be a problem if all cashflows do not occur at the same time, since a large scheme could claim from the risk equalisation fund at a time when only a small scheme contributed to the fund (perhaps an extreme example, but illustrates the point). Schemes will price the risk equalization income into their contribution rates⁵ and will therefore not be able to wait for money, and may experience liquidity problems if payments from the fund are not coordinated effectively.
90. If there is prospective equalisation, what happens if a scheme receives risk equalization funds and immediately thereafter goes insolvent? That scheme's members, who will have

⁵ If they do not do this then members do not benefit from risk equalisation. However, if they feel that doing so will lead to cashflow problems, they may be in a very difficult position.

a worse risk profile than average⁶ will join other schemes. The risk equalization fund will then be out of money to cover the risk in those schemes. This could be especially relevant where a large medical scheme with a worse than average risk profile is closed due to solvency or administrative or other reasons.

91. The timing of payments to and from the risk equalization fund will not be easy to manage. Does Government guarantee the solvency of the risk equalization fund?
92. The interaction between risk equalization payments /receipts and solvency requirements is of critical importance. A scheme with a good risk profile that has to pay into the risk equalization fund has to raise higher contributions than what would have been required with its good risk profile. The scheme then has to raise an additional 25% in respect of the higher contributions raised to meet solvency requirements, and hence even higher contributions will have to be raised to meet this solvency requirement. Once contributions have been determined to meet the solvency requirement, the scheme must pay across a portion of this higher contribution to the risk equalization fund. Solvency may then be considerable in excess of 25% of post-risk equalization fund contributions, yet solvency cannot be reduced since the scheme needs to show 25% of gross contributions as a solvency margin. Members would have to pay for such a conservative solvency policy via scheme contributions, since a scheme has no other source of capital. This may lead to member instability in the market, since those members may then choose to join other schemes where they pay less for the same benefits. This in turn means that the receiving schemes' solvency would be under pressure, which in turn may lead to further member movements as described above.
93. We therefore believe that it is imperative that the solvency requirement must be net of risk equalization contributions. It would be even better if solvency is properly determined on the basis of risk-based capital.
94. The risk equalization fund itself would also have to meet solvency requirements, and unless such solvency is guaranteed by Government, members would have to pay for the capital of the fund, which we believe should be avoided given current cost pressures experienced by members.
95. Has the cost of HIV / AIDS been taken into account? If HIV / AIDS cover is included in PMBs, the cost of PMBs will increase over time. Combined with lack of mandatory cover, this may lead to more people opting out of medical schemes given the arguments raised above.

Suggestions for future legislation

96. Tax: do not change the tax structure if there is a risk of employers changing the salary structuring as members and Government would lose out. The current tax system is progressive in any event.
97. Suggestions with regards risk equalization:

⁶ This will be the case since the scheme was entitled to payments *from* the risk equalisation fund – implying that its members have a higher risk than average.

- Specify the timing of cashflows exactly
- Determine the Government's guarantee on the solvency of the risk equalization fund
- Capital funding of the risk equalization fund – investigate how capital will be raised
- Calculate scheme solvency post- risk equalization fund cashflows
- Do not rush the formula determination
- Have a “shadow formula” for at least a year before implementing, and investigate the impact of the formula on all schemes given the actual PMB experience before implementation
- Investigate the inclusion of other factors, e.g. non-PMB benefit levels and “psychological visits”
- Implement risk equalization only with mandatory cover. Mandatory cover does however pre-suppose cheap PMB's
- Investigate the primary care PMB package as was done with bargaining council schemes
- Allow full underwriting in respect of non-PMB benefits

Tax reforms

98. Current tax rules – summarise

99. Idea is then that Government provides per capita subsidy to REF, and that individuals through loss of tax “subsidy” fund this (perhaps in addition to Government funding). Individuals may also make a direct income-based contribution to the REF, in the form of an earmarked tax or otherwise.

100. Initial discussions on the way in which tax deductions may be restructured have indicated the following. Note that the recommendations of this committee had not been finalized at the time of writing, and that comments here should therefore be seen in the context of not having done complete research on the matter.

101. Best to consider example. In this example we have simplified matters by only including cash salary and medical subsidy amounts and deductions. This is to highlight the impact of changes to tax rules relating to medical subsidies. In this section, we only consider an employee at a constant salary of R5000 per month, and total medical contribution of R900 per month. Appendix 5 contains examples at other salary and medical contribution levels.

Assume the employee earns R5000 per month. The total medical contribution is R900. The employer pays a subsidy of R600 on top of the salary. The corporate tax rate is 30%.

Current tax situation:

Total medical contribution =	R900
Employee salary =	R5 000
Employer subsidy =	R600
For employee:	
Medical expenses in excess of 5% of salary = $(900 - 600) - (0.05)(5600) =$	R20
Tax rate =	18%

Primary tax rebate = $5400 / 12 =$	R450
Employee tax = $(0.18)(5000) - 20 - 450 =$	R430
Employee net position = $R5000 - 430 - 300 =$	R4 270
Actual employee net tax rate	7.68%

Hence, Government gets tax of R430 from employee

Government gives deductions of:	
For employee = $20 + 450 + (0.18)(600) =$	R578
For employer = $(0.30)(600) =$	R180
Total deduction =	R758

Government's net position = $430 - 758 =$ -R328

Scenario A:

Suppose Government now introduces a new rule stating that employer subsidies are limited to a Rand amount of R400 per employee per month. IF the employer then does not pay the employee an additional R200 cash, the situation is as follows (under scenario C we discuss what happens if the employer pays an additional R200):

Total medical contribution =	R900
Employee salary =	R5 000
Employer subsidy =	R400

For employee:	
Medical expenses in excess of 5% of salary = $(900 - 400) - (0.05)(5400) =$	R230
Tax rate and primary tax rebate remains the same	
Employee tax = $(0.18)(5000) - 230 - 450 =$	R220
Employee net position = $5000 - 220 - 500 =$	R4 280
Actual employee net tax rate =	4.1%

Hence, Government gets tax of R220 from employee = **R210 less**
 Government also gets additional employer tax = $(0.3)(200) =$ **R60 more**

Government gives deductions of:	
For employee = $230 + 450 + (0.18)(400) =$	R752
For employer = $(0.3)(400) =$	R120
Total deduction =	R872

Government's net position = $220 - 872 =$ -R652

Government loses R324 under Scenario A relative to current tax position.

Scenario B:

Suppose Government indicates the same new rule as under Scenario A (employer subsidy limited to R400 per employee per month) and that, at the same time, the tax allowance relating to expenses in excess of 5% of income is removed. The impact will then be as follows:

Total medical contribution =	R900
Employee salary =	R5 000
Employer subsidy =	R400

For employee:	
Medical expenses in excess of 5% of salary	n/a
Tax rate and primary tax rebate remains the same	
Employee tax = $(0.18)(5000) - 0 - 450 =$	R450
Employee net position = $5000 - 450 - 500 =$	R4 050

Actual employee tax rate =	8.3%
Hence, Government gets tax of R450 from employee =	R20 more
Government also gets additional employer tax = $(0.3)(200) =$	R60 more
Government gives deductions of:	
For employee = $450 + (0.18)(400) =$	R522
For employer = $(0.3)(400) =$	R120
Total deduction =	R542
Government's net position = $450 - 542 =$	-R92
Government gains R236 under Scenario B relative to current tax position.	

Scenario C

As for Scenario A, but where the employer undertakes to spend the same Rand amount on staff costs by adding R200 to the employee's salary.

Total medical contribution =	R900
Employee salary =	R5 200
Employer subsidy =	R400
For employee:	
Medical expenses in excess of 5% of salary = $(900 - 400) - (0.05)(5600) =$	R220
Tax rate and primary tax rebate remains the same	
Employee tax = $(0.18)(5200) - 220 - 450 =$	R266
Employee net position = $5200 - 266 - 500 =$	R4 434
Actual employee tax rate =	4.75%
Hence, Government gets tax of R266 from employee =	R164 less
Government does not get additional employer tax	
Government gives deductions of:	
For employee = $220 + 450 + (0.18)(400) =$	R742
For employer = $(0.3)(400 + 200) =$	R180
Total deduction =	R922
Government's net position = $266 - 922 =$	-R656
Government loses R328 under Scenario C relative to current tax position.	

Scenario D

As for Scenario B (i.e. R400 cash subsidy without deduction for 5% of medical expenses in excess of income), but where the employer pays an additional R200 cash to the employee.

Total medical contribution =	R900
Employee salary =	R5 200
Employer subsidy =	R400
For employee:	
Medical expenses in excess of 5% of salary	n/a
Tax rate and primary tax rebate remains the same	
Employee tax = $(0.18)(5200) - 0 - 450 =$	R486
Employee net position = $5200 - 486 - 500 =$	R4 214
Actual employee tax rate =	8.68%
Hence, Government gets tax of R486 from employee =	R56 more
Government gets no additional employer tax	

Government gives deductions of:	
For employee = $450 + (0.18)(400) =$	R522
For employer = $(0.3)(400 + 200) =$	R180
Total deduction =	R702

Government's net position = $486 - 702 =$ -R216

Government gains R112 under Scenario D relative to current tax position, and the employee's overall tax rate increases from 7.68% to 8.68% (by R56).

102. In other words, depending on the actions of the employer, the Government could be in a position where they collect less tax revenue, whilst at the same time increasing the overall tax rate of the individual (see scenario D). Please see Appendix 5 for more detail on alternative scenarios. In particular, we investigate the impact of tax changes on high income individuals (e.g. someone earning R30 000 per month with a total medical scheme contribution of R900), as well as the impact of tax changes where Government uses increased tax revenue to subsidise medical contributions through the REF. In this respect, we investigated the impact if subsidies are restricted to a Rand amount of R400 (under different scenarios), and if the total contribution cost to the individual (and employer) decreases from R900 to R500 as a result of the Government subsidy.

103. From this analysis, the following points become clear:

- a. For low income individuals, a reduction in allowable deduction for subsidy could lead to a decrease in tax revenues relative to current structures where the employer moves towards a cost-to-company scenario, or re-structures the package to ensure that the employee still receives the same total remuneration.
- b. Even for high income individuals, a move to total cost to company means that whilst Government gains from the reduction in the subsidy, the gain is smaller where the employer moves to a cost to company structure as a result of the change in tax rules.
- c. Even where there is an allocation from the REF to the medical scheme, the increase in tax revenue may well be less than the required allocation to the REF – depending on the REF formula and whether the change in tax rules influences behaviour in terms of option choice (which in turn reduces tax income – see below).
- d. Where Government removes the deduction relating to medical expense in excess of 5% of income, the allocation from the REF will be more than the saving in tax, whilst at the same time potentially increasing the employee tax bill if the employer increases cash salary to compensate to some extent for the tax loss.

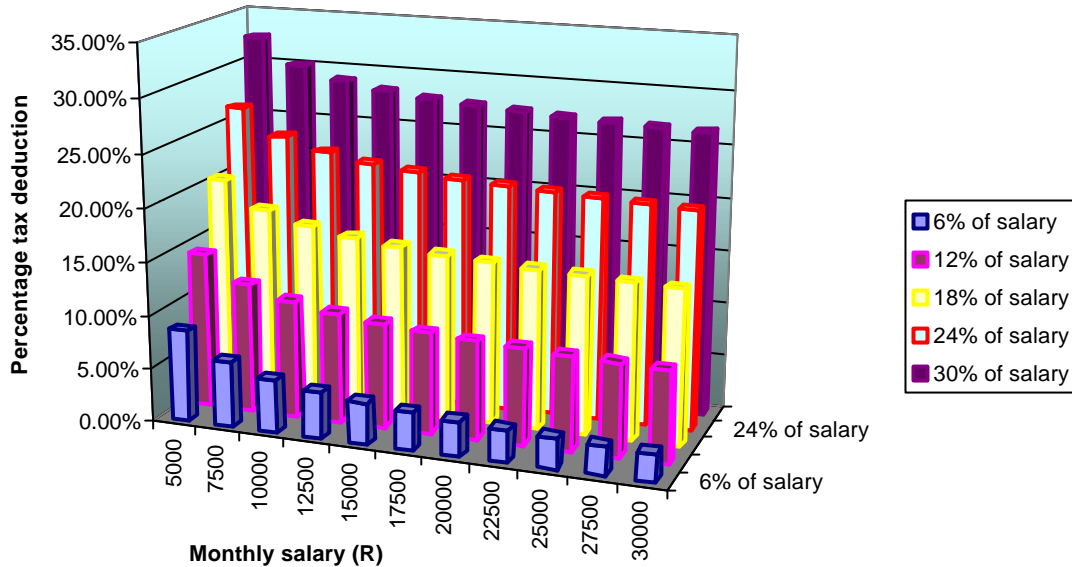
104. Given the above, it would be in Government's and members' interest if the tax re-structuring can be done in such a way as to avoid a scenario where a decrease in allowable tax deductions means that members' behaviour changes and that there is a larger decrease in tax revenues (i.e. overall Government is in a worse position than before the change) and that this would then require additional member or Government or employer contributions to the REF.

105. In order to get a better impression of the structure of the current tax system, we built a model for the analysis of the impact of tax and tax deductions on employees. The aim of this model is simply to evaluate how regressive the current medical expense tax

system is. Before doing this, we need to define a number of terms in connection with the evaluation of a tax system:

- a. A **progressive** tax takes a higher *proportion* of income from an individual who has higher income. Note that the relevant measure is proportion of income, not Rand tax amount.
 - b. A **proportional** tax takes a constant proportion of tax at all different levels of income
 - c. A **regressive** tax takes a lower proportion of income from higher earning individuals
 - d. A progressive tax system is generally viewed as desirable or equitable since it based on the **ability-to-pay principle**.
 - e. In this way, a progressive tax system ensures **vertical equity**, in that those individuals with higher income, who have excess income once they have provided for necessities, and hence they have a greater proportion of income available to pay taxes.
 - f. A progressive tax system would also ensure **horizontal equity**, i.e. equity between individuals in the same income group by allowing, for instance, larger tax deductions for those individuals with a larger number of dependents.
 - g. A tax usually has two consequences to taxpayers: a **direct burden** (the actual income taken from taxpayers) and an **excess burden** (the change in behaviour as a result of the tax, and the value of that change in behaviour to taxpayers). The excess burden is the amount of money taxpayers would have to receive, over and above the tax actually paid, in order to be just as well off as if there were no tax. An **efficient** tax system would be one that minimizes the excess burden. An inefficient tax system would lead to a change in behaviour, and may even lead to an overall reduction in tax income, as illustrated in the examples above.
 - h. Where there is an **inelastic demand** for a particular good (i.e. the demand for the good stays the same despite large increases in price), such as health care services (see Taylor Commission report, p ???), the imposition of additional taxes, or the removal of tax subsidies, would therefore not lead to a large excess burden. However, if medical expenses can be regarded as a necessity, the imposition of tax or removal of tax subsidies on medical expenses could be regarded as a most regressive policy, since it removes tax allowances in respect of necessities. The assumption here is that medical expenses are necessities by definition, and that people would not incur medical expenses unless they have to.
106. In the context of medical expense tax deductions, a progressive tax system would therefore ensure both vertical and horizontal equity in the following way:
- a. Vertical equity: by ensuring that higher earning individuals receive a *smaller proportion* of their income as a tax deduction
 - b. Horizontal equity: by ensuring that people with higher levels of medical expenses in the same income group receive higher *proportion* tax deductions
107. Following graph indicates how current tax system is progressive on the basis of these two criteria.

Percentage employee tax deduction as a result of different medical expense levels



This graph based on tax model, determined as follows:

The model determines an employee's monthly tax deduction in respect of his/her total medical expenses and then expresses the deduction as a percentage of monthly salary. Total medical expenses, for the purpose of the model, is defined as an employee's medical scheme contribution plus out-of-pocket expenses.

The following input parameters drive the model:

- Total monthly medical scheme contribution
- The employer's medical scheme contribution subsidy percentage
- Employee's monthly salary

Effectively, the government grants an employee the following tax deductions in respect of medical expenses:

- Total medical expenses (i.e. employee medical scheme contributions plus out-of-pocket expenses) in excess of 5% of taxable income
- Tax relief at the employee's marginal tax rate on the employer's portion of the medical scheme contributions

The tax model therefore calculates an employee's tax deduction as follows:

- It determines an employee's marginal tax rate based on his/her salary. The marginal tax rate is then applied to the employer's portion (if any) of the total monthly medical scheme contributions.
- For a complete range of out-of-pocket-expenses (up to 100% of monthly salary), the model then determines the total monthly medical expenses in excess of 5% of the employee's monthly taxable income.

- The sum of the above calculations therefore provides the government’s monthly tax deduction to an employee in respect of medical expenditure. This is consequently expressed as a percentage of the employee’s monthly salary.

The above calculations are repeated for a range of alternative monthly salaries and then plotted on a graph to illustrate graphically how the government’s tax deduction to an employee varies as a function of both total employee medical expenditure and employee salary.

Conclusion and recommendations

108. The conclusion will express sentiment that whilst in overall support of policy direction, there are many pitfalls if sequencing of RE and tax re-structuring not properly implemented.
109. Mandatory cover is a critical requirement
110. Reconsider appropriateness of PMB package
111. Suggestions in respect of tax re-structuring: do not change the tax structure if there is a risk of employers changing the salary structuring as members and Government would potentially lose out. The current tax system is progressive in any event.
112. Suggestions with regards to risk equalization:
 - Specify the timing of cashflows exactly
 - Determine the Government’s guarantee on the solvency of the risk equalization fund
 - Capital funding of the risk equalization fund – investigate how capital will be raised
 - Calculate scheme solvency post- risk equalization fund contributions
 - Do not rush the formula determination
 - Have a “shadow formula” for at least a year before implementing, and investigate the impact of the formula on all schemes given the actual PMB experience before implementation
 - Investigate the inclusion of other factors, e.g. non-PMB benefit levels and “psychological visits”
 - Implement risk equalization only with mandatory cover. Mandatory cover does however pre-suppose cheap PMB’s
 - Investigate a primary care PMB package as offered by bargaining council schemes – the current PMB package may be too expensive
 - Allow full underwriting in respect of non-PMB benefits
113. End off with sentiment quoted by Wilson and Ramphela: “People who care about avoidable poverty...tend to split into two camps, which need not work against each other but often do. One emphasizes investment, creation of employment opportunities, and

macroeconomic management; the other, such questions as the distribution of land ownership, foreign influence, social barriers to mobility, differential access to deduction or use of the political system to stack the cards in favour of special privilege. Both sides are right, except when they disdain the other.” I.e. working together should be aim of Regulator and industry, and both have comments about the other that are probably right – challenge is to find health care financing system which would achieve desirable objectives for both private and public sectors, and for both Regulator and private sector role players.

APPENDIX 1

Administrative complexity introduced by November 2002 PMB legislation

In this Appendix, we briefly discuss some of the administrative complexity introduced by the new PMB legislation. At the outset, it must be stated that medical scheme administration must be one of the most complex administrative environments to implement. We start by discussing the current administrative and managed care requirements in order to assess a claim relating to chronic medication, and thereafter how this will change with the introduction of new requirements in respect of PMBs.

In order to assess and process a fairly standard claim (say, for instance, in respect of chronic medication), a scheme currently has to ensure, somewhere in its administration and / or managed care system, that certain checks are done before payment is made. The checks that are currently required are indicated in black, whereas those indicated in red

Membership checks

1. Is the claim submitted by a member of the scheme? Check ID, gender, name.
2. Is the member up to date with contributions? If not, is the member sufficiently in arrears to have benefits suspended?
3. Is the claim in respect of a registered dependent of the principal member (if the principal member does not claim him / herself)?
4. Are all the details of the beneficiary correct?
5. **Is the beneficiary registered for a particular treatment protocol under one of the protocols managed by the managed care provider?**
6. **Identify the medical history of the beneficiary for further checks below.**

Service provider checks

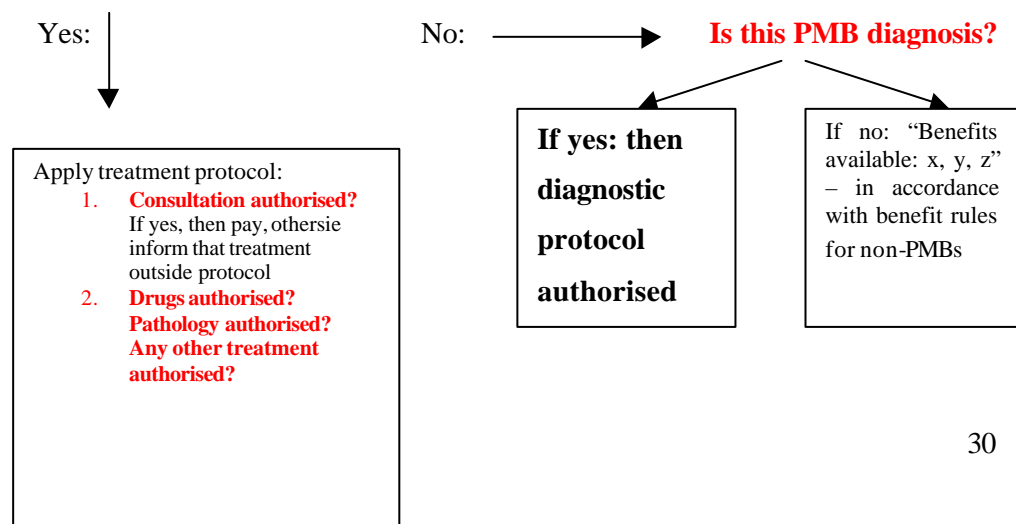
1. Was the treatment provided by a registered medical service provider? Check for valid practice number against name of service provider.
2. Check whether the treatment is consistent with the type of service provider? E.g. a physiotherapist cannot claim for performing a laparoscopy.
3. Check bank details of service provider: account number, bank, branch code, type of account, plus other contact details.
4. Check whether the service provider owes the scheme any amount (to be deducted then from what the scheme owes the service provider)
5. **Is the service provider part of the designated service provider (DSP) network for the option that the beneficiary belongs to?**
6. **If the service provider is part of a DSP network, what tariff structure applies to this service provider, including identification of agreed discounts for particular services where relevant etc? Note that it seems as if some administration systems cannot easily implement multiple tariff structures, which some Boards of Trustees would ideally have preferred for 2004.**

Benefit and claim checks

7. First the scheme must be allocated to the correct type of benefit e.g. hospital, chronic medication, savings account etc.
8. Tariff: ensure amount charged is consistent with tariff code, and only pay up to tariff amount. There are about 30 000???? Tariff codes that have to be updated continuously, in addition to a host of NAPPI codes.
9. Does the member have benefits available in the particular category of claim? Here the administrator needs to ensure that there is sufficient benefits available in the relevant benefit category given the claim history of the member, taking into account whether the member has pro-rata benefits (due to, for instance, joining the scheme after 1 January in a year), and, depending on the benefit structure, whether the claim should be paid from savings or risk benefits, and whether the claim should accumulate to a threshold.
10. Check for relevant exclusions, if any (e.g. cosmetic treatment, self-inflicted injury, pre-existing condition exclusion where relevant)
11. Check for relevant waiting periods, if any
12. Check for consistent dates: is the date of treatment within the period of membership (again reconcile with membership checks – i.e. after date of joining and before date of resignation)? Is the date of treatment before date of receipt of claim (it is surprising how often this is not the case!) and date of assessment before date of payment?
13. Is the claim consistent with and valid given prior claims history of member (i.e. do not pay for duplicates)?
14. Is the claim consistent with the age and gender of the patient (i.e. no caesarean delivery for a male)?
15. Has there been abuse of tariff codes – i.e. where more than one tariff code relates to the same service, does the provider charge for both?
16. Is there anything indicating that the treatment is contra-indicated? This is where managed care measures are implemented.
17. Are there any “non-chargeables” on the account – particularly important to perform the extensive range of checks for this on hospital and related accounts.
18. THINK ABOUT THIS MORE, BUT FOLLOWING IS A BRIEF INDICATION OF NEW CHECKS.....WILL FLESH IT OUT...

1. Goes to GP.
2. Diagnosis already confirmed OR has symptoms suggestive of diagnosis.
3. If diagnosis confirmed for PMB, then registered as PMB user for CDL? Then treatment protocol applies to patient. (Managed care systems required to register patient for treatment protocol if suffering from PMB).
4. For ALL claims originating from GP or specialist, diagnosis or suspected diagnosis has to be submitted. For instance:

a. Registered PMB user for submitted ICD-10 code?



NOTE: risk of claim reversal...discuss

- b. **If not PMB**, then member / GP informed whether there are benefits available.
- c. **If PMB, but voluntary use of out of network facility**: then state and assess co-payment Rx OR x% OR benefits available etc.
- d. **If involuntary use of non-DSP**, message from scheme: “phone xyz to authorise involuntary use of non-DSP” – CAN THERE BE PENALTIES WHERE MEMBER / SERVICE PROVIDER DOES NOT PHONE??
- e. **Authorisation number** must be quoted in subsequent medication / GP / path claims all related to same event for same patient.
- f. Then claims coming in from other sources will be linked to treatment protocol in the background and authorisation provided as and when claim comes in.
- g. If any fraud or errors identified: member doctor-hopping, outside treatment protocol, treatment inconsistent with protocol, doctor / member trying different diagnoses until within PMB, service provider not authorised to provide treatment etc, then claim rejected / adjusted.

APPENDIX 2

Australian Public Health Insurance Industry: 1997 Industry Commission Report

State of the industry:

“The major regulatory influence on the Australian Private Health Insurance industry are the rules giving effect to the Government’s policy of ‘community rating’. This concept has never been clearly defined, and has become elastic in interpretation, but essentially means that funds are not to discriminate between people in setting premiums or benefits on the basis of expected claims risk.” (pg. xxxii)

“Together with the supporting ‘reinsurance’ pool arrangements – which serve to even out differences in the burden of claims resulting from older or chronically ill members – community rating of private funds in circumstances where members can enter or leave at will (with Medicare as a backstop) has created some perverse effects. It has:

- dulled the incentive for funds to reduce costs, especially in those risk categories covered by reinsurance;
- led to a proliferation of products designed to target particular groups (while precluding development of some products that would be in demand); and
- heightened ‘adverse selection’, whereby lower risk people have been leaving (unwilling to pay the actuarially excessive premiums needed to ‘pay for’ higher risk people) and those expecting to make claims have been joining (some of whom ‘hit and run’).” (pg. xxxiii)

“These effects have created an inherent instability in the industry. They add to what has become a vicious circle, in which rising premiums lead to lower risk members dropping out first. This not only shrinks the pool of insured but raises its overall riskiness, leading to higher pay outs and higher premiums again.” (pg. xxxiii)

Reducing adverse selection:

According to the report, adverse selection – good health risks leaving, bad risks coming and staying – is the combined results of community rating regulation and the fallback of free public hospitals. “Its effects could be moderated – helping to stabilize the overall system- by some changes to regulations, without undermining the broad principle of community rating.” (pg. xli)

‘Lifetime’ community rating (pg. xli)

- The most effective mechanism – raised by a cross-section of participants – would be a form of ‘lifetime’ community rating, which introduces penalties for later aged entry to insurance. For example, a 65 year old who had entered insurance at age 35 would pay a much lower premium than one who had entered at say 60 years of age – and would pay the same premium as someone entering today at the age of 35.
- This system has obvious advantages in deterring late and ‘strategic’ entry into health insurance. It is thus much fairer to existing and long-term members, as well as producing a more balanced pool of risks and thus lower premiums.
- In its pure form, lifetime community rating is a ‘funded’ scheme, in which people pool reserves within their age cohort to meet their health costs in old age. Premiums are set to meet expected costs over the remaining years of life.

- While relatively effective in addressing adverse selection, such a system is likely to require complex and costly transitional arrangements and could remain vulnerable to or impede broader changes in the health system.
- Until a wider review of the health system takes place, such radical restructuring of community rating may be counterproductive.
- These difficulties are largely avoided with an unfunded lifetime community rating scheme, which essentially imposes higher premiums on those who enter insurance later in life. Contrary to a funded approach, the level of premiums would depend on the composition of the membership pool in a given year.
 - The Commission also considered a ‘non-price’ variant of this form of lifetime community rating, which would involve longer eligibility waiting periods for late joiners. Such a scheme could be combined with the premium-based one, but this would be confusing. In choosing between the two, the Commission has been attracted to the price variant because of some advantages in efficiency and community acceptance.
- The Commission considers that introducing unfunded lifetime community rating would not create inequities:
 - No existing member would be adversely affected (indeed pressure on their premiums would be reduced); and
 - A grace period would ensure that intending members were not disadvantaged.

Industry Commission recommendations (pg. li):

- The introduction of (unfunded) lifetime community rating for private health insurance, under which people entering insurance late, for example after the age of 30 years, would pay higher premiums than those who enter early.
- As part of a wider review of the health system, community rating principles need to be examined.
- The Commission recommends that community rating no longer apply to ancillary cover.

APPENDIX 3

NOTES ON RISK EQUALISATION INTERNATIONALLY

Belgium: (Schokkaert, Van de Voorde, 2002)

Belgium's health insurance structure is rather atypical, as a few large sickness funds dominate the market of compulsory health insurance, which is completely closed to new entrants. (pg.5) While membership of a sickness fund is compulsory, every individual in the population are allowed to enroll in the sickness fund of his or her choice.

Policymakers have been very reluctant to introduce market competition in this compulsory health insurance system and "in all negotiations with the providers sickness funds act as a cartel." (pg. 6). In the market of supplementary health insurance, there is however growing competition, mainly between those sickness funds that dominate the market of compulsory health insurance. The Belgian system is therefore a hybrid combination of centralisation and government regulation on the one hand and more or less competing sickness funds on the other. (pg. 6)

Sickness funds are not obliged to enroll all interested patients, but they are pressurised not to follow an openly discriminatory policy as they "would be subject to heavy social and political pressure and reputation effects would most probably be disastrous." (pg.14).

Member premiums to the sickness funds are minimal. "The flat rate premium, which is paid directly to the sickness fund, is extremely small: only about 2.5 Euros per year. It is the same for all members of a given national association of sickness funds (premium differentiation is legally forbidden), but possibly different for the different funds." (pg 8) The premium is therefore too small to influence the choice of sickness fund of the insured.

The government fixes the health care budget annually, primarily by extrapolating the previous years' budget with a fixed growth rate. "The two primary sources of funding the compulsory system are social security contributions and government subsidies from general tax revenue." (pg. 7)

The compulsory cover benefit package is very comprehensive, including full out-of hospital cover, with the exception of the self-employed (about 10% of the population) where compulsory cover does not include out-of-hospital cover. Due to the lag between medical innovation and inclusion of the new treatment in the compulsory cover, some treatments only become part of the compulsory benefits package with some delay. Other supplementary services, such as orthodontics, a part of physiotherapy and non-traditional therapies such as acupuncture and homeopathy, are not covered. Patients may however take out supplementary insurance for these treatments. (pg. 8)

"Compulsory health insurance is combined with independent medical practice" (pg.9) For a primary consultation, patients are free to consult either a general practitioner or a specialist and remuneration is mainly on a fee-for-service basis. The physician/population ratio is one of the highest of the industrialised countries (34.4 doctors per 10 000 inhabitants in 1995). This leads to "supply induced demand." (pg.9) Patients are required to pay the physicians directly for most ambulatory care and are partially reimbursed by their sickness funds on submission of the medical bill. "The residual co-insurance payment to be paid by the patient is relatively high

according to international standards. This may to a certain extent counteract the tendency towards supply-inducement.” (pg.9) In 1997, official co-payments amounted to about 11% of the total reimbursements in the compulsory system.

Sickness funds are not allowed to selectively contract with providers within the compulsory system. Health Maintenance Organisation (HMO) – type organizations do not exist. Historically, the largest sickness funds (Christians and Socialists) have played some part in the organisation of non-profit hospitals and in the exploitation of pharmacies. Some sickness funds have even remained legal owners of a non-profit hospital. In this case, the financial administration of the hospital is completely separated from the financial accounts of the particular sickness fund. In political circles, this situation is viewed as an ideological relic of the past and that the links between providers and sickness funds should be weakened. Managed care concepts have therefore been largely unsuccessful.

However, in the supplementary insurance domain, “more and more examples of managed care and, more specifically, of selective contracting with respect to innovative treatments and orthodontics” (pg.10) have been observed.

Prior to 1995 sickness funds were reimbursed for all their expenditures. The large differences in their membership risk profiles were therefore fully compensated, there was not incentive for risk selection and all funds were encouraged to guarantee equal access to all citizens. Despite this, politicians became aware of the inefficiencies entailed by the system and wanted to implement some financial responsibility in order to keep the increasing costs under control. “However, equal access for everybody has remained one of the most popular values of the Belgian population.” (pg. 10)

In 1995 a mixed reimbursement formula was introduced aimed at distributing the resources among the national associations of sickness funds. Since then sickness funds are partially financed through a risk adjustment system whilst also being held partially financially responsible for the difference between their actual and their risk-adjusted (referred to as normative) expenditures. The present risk adjustment system is based on the results of a regression analysis with aggregate data.

“The focus on equity and equal access in Belgium has led to the introduction of a rather complicated risk adjustment system, or, to use the Belgian terminology, a complicated definition of normative expenditures.” (pg.12) A significant factor influencing normative expenditure is medical supply variables, for example number of providers, number of hospitals, etc. Politically it was felt by a many that sickness fund should not be compensated for differences in expenditures due to differences in medical supply. Provider density is very high in Belgium and it therefore leads to supply-induced demand. There is also some regional differentiation, and consequently it was decided not to include medical supply in the risk adjustment system in so far as normative expenditures are concerned.

Risk adjustment factors used for employees and the self-employed include, amongst others, gender, age, unemployment, working in the public sector, mortality, invalidity, urbanisation (density and quality of housing), number of dependants, mortality and income.

“While the introduction in 1995 of real individual financial responsibility for the sickness funds may be seen as a structural break with the past, until now the effects have been rather limited.” (pg.15) Sickness funds were not provided with any additional instruments to control health care costs, whilst at the same time being subjected to many limitations imposed on the degree of

financial responsibility. The only real effect has been that sickness funds have taken a tougher stance in their collective negotiations with providers.

In other words, Belgian risk equalisation does not influence consumer premiums, but rather the sickness fund's profitability and hence provider fees.

Germany: (Buchner, Wasem)

Germany has a long history of social health insurance, going back to the late 19th century. During the early 1990's, unequal rights to choose between sickness funds, growing political concern about the top-down cost containment policies, and a general political climate in favor of deregulation and competition, led to a reform. As from 1996, almost all insured under the German health system were granted an annual right to switch between sickness funds. It was accompanied by the establishment of risk adjustment commencing in 1994. The risk adjustment mechanism started two years earlier than the implementation of more sickness fund choice to give those funds who traditionally insured the bad risks a fair chance to reduce their contribution rates.

“The main reason for the introduction of free choice of sickness fund and the risk adjustment mechanism was more the improvement of equity by giving equal rights of choice to white-collar and blue-collar workers than the improvement of efficiency by establishing more competition between sickness funds.” (pg.22)

Germany's health insurance system is divided into two main components:

- Social health insurance
- Private health insurance

90% of the German population are covered for health insurance by social health insurance (GKV). Compulsory insurance is primarily for employees, unemployed, retirees, students and farmers. A dynamic income threshold also exist, above which employees no longer are insured compulsory. For those whose income surpasses the threshold, there is opportunity within the social health insurance system for voluntary insurance. About 20% of the insured in the social health insurance system are voluntarily insured.

Private health insurance (PKV) provides three types of policies:

1. full substitutive health insurance for some 7% of the German population (mainly high income employees and the self-employed);
2. substitutive health insurance for civil servants (about 5% of the population) for whom the government pays between 50 and 70% of their healthcare bills and who insure the balance of the costs with private insurers; and
3. supplementary health insurance for some 10% of those insured with social health insurance to cover additional services like single rooms in inpatient care.

A capital-funded financing system is used in the private health system where premiums are risk related and calculated according to detailed rules laid down by law.

As people whose income surpasses the income threshold of social insurance are free to choose between social and private health insurance, there is competition between the social health insurance sickness funds and the private health insurance companies. The different forms of payment within these two systems, i.e. income-related contributions in the pay-as-you-go social health insurance system and risk-related premiums in the private health insurance, leads to

substantial anti-selection. In general, people with families normally tend to the public system, whereas singles not planning to have a family in the near future tend to the private system. In addition, private health insurers also exercise selection as they are not obliged to contract with people with poor health status. This “lead to a cherry-picking on the side of the insured, who have the opportunity to choose between the two systems, and to risk selection on the side of the insurance companies.” (pg.23)

The main risk adjustment mechanism in Germany covers only the sickness funds of the public health insurance system, although there have been proposals to include the private health insurance system.

More than 95% of the social health insurance benefit package is legally determined. It includes current expenditure for hospital care, ambulatory physician services, prescription drugs, dental care, applications and appliances, as well as transport costs. For these services, the insured have to pay different forms of co-payment, which are fixed by law and equate to an average of 9% of the sickness funds’ expenditures. Other than this co-payment there is no direct payment between the insured and the provider.

“Each sickness fund has to have a financial reserve of at least 25% of its average monthly expenditures, with a maximum of 100% of its average monthly expenditures.” (pg.24)

The relations between sickness funds and healthcare providers are governed by a legal framework within which the sickness fund associations and provider organisations fix the details, i.e. the sickness funds negotiate the tariffs with the providers. However, sickness funds and providers are not allowed to integrate into HMO-type organisations and “there is a very strong segregation between the financing and the provider side in the German healthcare system.” (pg.25)

“The central elements of a risk adjustment mechanism are the risk adjusters.” (pg.26) The following risk adjusters are used in the German system:

- Income
- Age
- Gender
- Disability
- Absenteeism from work

The risk adjustment mechanism is retrospective at the end of each calendar year with a preliminary monthly risk adjustment scheme – based on a mixture of last year’s and present data – during the year.

Differences in the income of the insured will have a significant impact on the financial situation of the sickness fund for two reasons:

1. income differentiated contributions rates are legislated
2. sickness fund members pay their contributions directly to their sickness fund.

“Therefore income is a very important risk adjuster, not as a proxy to morbidity, but in order to equalize the financial power of sickness funds.” (pg.26) More than 70% of all payments between sickness funds in the risk adjustment system are due to the income risk adjuster.

Empirical evidence on consumer mobility shows that 3-4% of the insured population switch sickness fund every year. It is mainly the young and healthy which use their annual right to change from one sickness fund to another in search of a contribution reduction, i.e. self-selection.

Morbidity (beyond age, gender and invalidity pensions) is not reflected in the risk adjustment mechanism. It can therefore still lead to differences in contribution rates. And because of the fact that it is primarily the healthy which switch to sickness funds with low contribution rates, the risk structures between sickness funds diverge, i.e. risk selection by funds.

“Since the introduction of more competition and risk adjustment, sickness funds increasingly behave as competitors on markets. They improved their services for their insured, intensified to think about cost control, managed care – but also to think about risk selection in order to improve their financial situation (and hence to be able to offer an attractive contribution rate).” (pg.31)

“The East-West split and the way to a unified mechanism is a very special problem of the German risk adjustment mechanism.” (pg.31) The system was completely separated for East and West Germany during the first 5 years of risk adjustment as financial power and need were calculated separately for East and West, and transfers between sickness funds could happen only within the two regions but not between them. The reason for this regulation was that it was seen as undesirable that the differences in income levels of East and West Germany would be equalised. At the same time it was not wanted that the East German healthcare system would get the same standardised expenditures as in the West, because the actual expenditures were still much lower.

Some East German regional funds’ financial situation had worsened dramatically during the second half of the 1990’s, partly due to the insufficient modeling of morbidity in the risk adjustment mechanism. “Starting in 1999, parliament has decided a step-by-step approach to a unified mechanism, which will lead to a unified mechanism in the year 2007.” (pg.31)

In December 1999 the German parliament decided that government should appoint an expert group to review the first 5 years of risk adjustment and to make proposals for future development. In February 2001, the expert group delivered its final report.

They proposed that morbidity should be reflected directly in the risk adjustment mechanism by establishing diagnosis-based risk adjusters. In order to do this it is necessary to determine which, if any, of the existing risk adjusters fit the German system, the German morbidity situation and the diagnosis structures in Germany, and what kind of adaptations are required. It was suggested to introduce the diagnosis-based risk adjustment system partly in 2006 and completely in 2007.

The expert group also proposed the implementation of a high cost pool, designed as a stop loss pool (“proportional outlier risk sharing for the costs of high cost insured” (pg.33)). According to this proposal, the high cost insured are identified by costs above a threshold, whereby a fixed percentage of that part of the costs which exceeds the threshold, is financed by the pool.

Israel (Scmueli, Chernichovsky, Zmora)

Like several other countries during the 1990’s, Israel reformed its health care system in 1995 by introducing a national risk adjusted capitation system. The main component of that reform was due to legislation passed by a National Health Insurance Law. The Law provides for:

- mandatory universal health insurance;
- assures a uniform package of benefits; and
- specifies the responsibility of the state to cover the expenditure for its provision. (pg.37)

Four sickness funds provide health care in a regulated competitive market, where premiums are replaced by risk adjusted capitation payments. Instead of gradually adopting such a system, Israel immediately implemented a fully prospective risk adjustment scheme based on age only (pg.41), supplemented by a 100% condition-specific risk sharing between funds (i.e. a high cost pool) for 5 conditions. The sickness funds receive a fixed payment for each person who is diagnosed with one of the following diseases: (pg.42)

- renal failure
- Gaucher's
- Talasemia
- Hemophilia
- AIDS.

The risk sharing payments to the sickness funds constitute 5-6% of the sickness funds' revenues from the risk-adjustment scheme. (pg.42)

The above risk-adjustment scheme, together with open enrollment, intended to transform an unregulated competitive health insurance market characterised by adverse selection and preferred risk selection into managed competition assuring quality of care, efficiency and fairness. (pg.37)

The National Health Insurance Legislation (NHIL) enacted on 1 January 1995 provides every Israeli citizen a right to a basic package of care and entitlement is universal. Each citizen must choose one of four non-profit sickness funds operating in Israel, through which he or she receives medical care from providers contracted by the sickness fund. (pg.38) The financing sources of the cost of the public package of services are:

- An earmarked income tax collected by the National Insurance Institute which financed 48% of the cost in 1999;
- Government contributions from the general revenue (47%); and
- Private out of pocket co-payments (5%)

The sickness funds' package of benefits is listed in the Law. It is the package given by the GSF - the largest sickness fund - in 1994. The prescribed minimum benefits (PMB) package covers basically all primary (family physicians), secondary (specialists) and tertiary (inpatient) general care and is defined in terms of needs (medical conditions). (pg.39) The package does not however include care needed due to road accidents (MVAs) or work-related injuries. Maternity care is also not included in the basic package and the government is directly responsible for psychiatric care and public health services. Dental care is not included in the benefits package and is privately financed, although some sickness funds offer dental care at reduced prices to their members. (pg.39)

Supplementary insurance is offered by both private insurers and by the sickness funds (officially termed 'Additional Health Services'). "The sickness funds' supplementary insurance market is regulated in that neither selection nor underwriting (selective coverage) is allowed (the private supplementary insurance market is unregulated). Premiums are age related." (pg.39)

The Israeli health care system utilises extensive managed care models. Management and provision of care is the responsibility of four sickness funds each of which operate different organisational and managed care models. (pg.39)

According to the first model, typical to the Maccabi Health Services (MSF), the sickness fund purchases primary, secondary, and tertiary services from freestanding providers. The customer is then entitled to choose service providers from among a provider list operating with the sickness

fund. The fund may also allow the choice of provider not on that list, upon additional payment by the patient.

According to the second model, typical to the General Sick Fund (GSF), the sickness fund provides all or most of the services within establishments that the institution itself operates, usually with salaried employees.

The third model, typical to Mehuedet Sickness Fund (USF) and Leumit Sickness Fund (NSF) is a mixture of the two first models. I.e. the sickness fund operates primary and secondary services with its own salaried employees, but purchases other services from independent providers. (pg.40)

One of the NHIL's principal objectives was to introduce financial discipline into the health system, in particular in relation to sickness fund deficits resulting from poor management and adverse selection. In 1998, a formal 'safety net' was introduced, whereby, conditional on financial-performance (mainly deficit reduction measures), the sickness funds were entitled to global government subsidies. "The safety net transfers were aimed both to prevent the collapse of the sickness funds, and to reward cost containment efforts. The shares of the sickness funds in the safety net moneys were determined by their shares in the risk-adjusted capitation and by the mean incomes of their insured (to cover for exempted co-payments)." (pg.40) Currently, the main assurance for the continued functioning of the sickness funds is the safety net. While there is no formal and explicit governmental guarantee in case of bankruptcy, the government is likely to support any sickness fund that gets into severe difficulties.

Free entry and the competition among the sickness funds are supposed to enhance the efficiency of a competitive health insurance market. There is however limited competition among sickness funds. "The situation is probably more like a cartel, even if implicit, that is facilitated by the small number of funds and smallness of the country. The sickness funds can easily coordinate activities." (pg.41) The sickness funds do not compete on prices, but rather on quality of care.

At present, explicit risk selection is not an issue because the sickness funds are obliged to accept all applicants. Implicit risk selection via selective marketing is rarely an issue because marketing expenditures are closely monitored in any case. Implicit selection by via strategic elimination of services for high-cost insureds is also not an issue since even if it exists, it has been masked by the overall tight budgets and deficits. (pg.44)

Netherlands: (Lamers, Van Vliet, Van de Ven)

"The health care reforms in the Netherlands are inspired by Enthoven's Consumer-Choice Health Plan and are based on the recommendations of the Dekker-committee (March 1987)." (pg.49) The two key-elements of the system are compulsory health insurance for the entire population and regulated competition. These reforms are a transition from government-regulated cartels (i.e. government purchased healthcare) to government-regulated competition among insurers as well as among care providers.

"A key element of the reforms is the gradual transfer of the role of the third-party purchaser of care from government to competing care insurers. Consequently direct government control over prices and productive capacities has to make way for private contracts between care insurers and the care providers." (pg. 49) As part of this market-orientated health care reform, in 1991 risk adjusted premium subsidies were introduced in the Dutch social health insurance sector.

The health insurance system in the Netherlands is divided into three compartments: (pg.51)

- A compulsory national health insurance that provides coverage to the whole population against catastrophic risks such as hospital care exceeding one year and long-term institutional care. (44% of health care expenditure)
- Compulsory sickness fund insurance for people in the lowest income brackets (62% of the population; accounts for 37% of health care expenditure) and the voluntary private health insurance (16% of health care expenditure), which mainly covers short-term care.
- Voluntary supplementary health insurance, consisting of health services not included in the first and second compartments, e.g. luxury hotel services when hospitalized, dental care for adults and prolonged physical therapy. This supplementary coverage can be bought from a private health insurance company. The premium is per individual and may be risk-related. (3% of health care expenditure)

In 1991 risk adjusted premium subsidies were introduced in the Dutch social health insurance sector for non-catastrophic risks (i.e. sickness fund insurance).

Consider the financing system in respect of sickness fund insurance after the introduction of risk adjusted premium subsidies. All sickness fund members must pay an income-dependant contribution levied by the tax collector (to a central risk equalisation fund) as well as a small community rated premium contribution (referred to as a 'nominal premium') to be paid directly to the sickness fund of their choice. The income-dependant contribution represents about 90% of the total contribution, whilst the nominal premium represent the 10% balance. The income-related contributions collected in the central risk equalisation fund will be utilised by sickness funds receiving risk adjusted premium subsidies. A sickness fund is obliged to quote the same nominal premium to all of its members, but among the sickness fund the nominal premium varies. (pg.52)

Due to solvency requirements, sickness fund are obliged to have a financial reserve. In 2000 sickness funds were obliged to have a financial reserve of 4.7% of the total costs. The minimum solvency requirement is 500 000 Euros per sickness fund. In recent years, the legally earmarked reserves for executing the sickness fund insurance grew rapidly. "Therefore, starting in 2001 a new law requires sickness funds to return these reserves to the central risk equalisation fund as far as they exceed 2.5 times the solvency requirements." (pg. 52)

In 1991 risk adjusted premium subsidies were introduced in the Dutch social health insurance sector. In 2001 the premium subsidies are based on the risk adjusters age interacted with gender, insurance ground interacted with age and degree of urbanization. Insurance ground is the compulsory cause for enrolment with a sickness fund, for example wage earners with a salary below a certain threshold, people with an allowance because of disability for work, recipients of unemployment benefits, elderly people with low incomes. In addition to these risk adjusters 'historical costs' play a role. It is defined as the average costs of the sickness fund in question in the years t-2, t-3 and t-4, per capita and adjusted for changes in the composition of the portfolio between these years and year t as far as the risk adjusters are concerned. Three types of care are distinguished: outpatient care, specialist care and hospital care. (pg.54)

In the Netherlands there are two types of risk sharing between the sickness fund and the central risk equalisation fund: proportional risk sharing and outlier risk sharing. Outlier risk sharing is for the sum of costs of outpatient care and production-dependent hospital care. The degree of risk sharing is different for various cost components.

Expectations are of trend towards more managed care to improve efficiency in health care production and more managed competition in the Dutch health care market to improve client

satisfaction. It is expected that care insurers will act more and more on behalf of their consumers and to compete on price, quality, services and consumer responsiveness. (pg.58)

Options for improvement of the risk adjustment system are the introduction of health based risk adjusters based on diagnostic information from prior health care utilisation such as prescribed drugs or from hospitalisations.

The public has been growing increasingly dissatisfied “with the health care system, especially with the increasing waiting lists, the irresponsiveness of the health care system to consumer preferences, and with the effects of global budgeting by government (which is now commonly referred to as ‘centrally planned scarcity’).” (pg.58)

One may expect that government will increasingly transfer the responsibility for efficiency in health care to other parties, namely care insurers, providers and consumers. “This will be reflected in a further deregulation of existing legislation with respect to planning, budgeting and prices.” (pg.58)

General thoughts on risk equalisation in South Africa

1. Problematic risk management given voluntary cover.
2. Cost of PMBs also a problem – if risk equalising for PMBs, affordability constraints make incentive for member anti-selection greater given open enrolment, which leads to higher cost, and so on.
3. Increasing disease burden in South Africa compounds this further – HIV / AIDS in particular relevant - also in terms of service delivery in public sector and extent to which it is possible to enter into DSP contracts with public sector. Cross-subsidy between young and old reduced.
4. Is risk pool not large enough? Large enough if stable – but where PMB cost high, greater instability until there is mandatory cover. Mandatory cover is probably a pre-requisite, as in other countries where risk equalisation implemented.
5. General consensus (?) that risk equalisation would have to be:
 - a. Prospective: otherwise incentive for claims control & managed care diluted even further; and removes uncertainties relating to IBNR calculations required for retrospective etc.
 - b. Comprehensive, i.e. explain most of variation in PMB costs (see below)
6. Comprehensive means that it would probably include both demographic and health-based factors. These could be: incidence (and intensity?) of chronic conditions, co-morbidity indicators, indicator of hospitalisation episode in previous year, maternity (?). Also required: age, gender, ethnicity (?), geographic spread (? – but may become more and more important as AIDS sickness becomes more of an issue)
7. What are the problems with reliance on prospective risk adjustment factors to explain the cost of PMBs? The cost of PMBs are influenced not only by demographic and health factors, but significantly influenced by:
 - a. Administrative and managed care capability of scheme to enforce treatment protocols
 - b. Scheme’s managed care philosophy & treatment protocol enforcement
 - c. Strength of scheme contracts with DSPs
 - d. Nature of DSP (public vs PPI vs private – NB!)
 - e. Extent of involuntary use of non-DSP services

- f. Exposure of scheme to standards of service in DSP and potential collapse of DSP, especially where adequate capital management not enforced in DSPs
8. Argument may be that not including these elements in RE formula maintains incentives for efficiency of managed care and administration. Probably fine, but how to use data then to derive risk adjustment formula for the rest? How easy to split between genuine demographic & health related risk factors, and efficiency-related factors? May not be possible to eliminate covariance in risk adjustment factors. Consequence: reduced statistical significance of risk adjustment factors, then inefficiency of RE.
 9. How does PMB system deal with scheme discontinuation? What if large scheme discontinued soon after receiving payment from REF (e.g. administrative collapse)? There may not be significant funds left over, and other scheme(s) in industry would have to bear increase in membership without benefit from REF – entire industry may even have to fund cost of members. In other words, all players in the industry become inter-dependent – also in terms of administration and quality of managed care.
 10. Contributions are high in South Africa, and influence behaviour, given guaranteed acceptance and open enrolment. With PMBs, standards of service provided will also influence behaviour. How do we risk equalise prospectively if payments from REF into or out of the scheme may result in members moving to other schemes, hence requiring more payments into or out of the scheme? Can ex-post adjustments deal with this? Potentially, but would lead to incredible complexity in terms of solvency.
 11. Schemes have differing levels of solvency - claims experience not the only factor influencing it (RE aims to remove different price of same cover in different schemes as a result of claims experience). Solvency also influenced by membership growth, investment experience, administration standards, bad debts, contribution adequacy etc. Which means that schemes still can't charge same price for same cover. Problem compounded by current onerous and inflexible solvency measures. Planned solvency relief on RE contributions?
 12. Will tax adjustments lead to sensible funding mechanism, or compound problems of anti-selection given voluntary cover and / or tax structuring adjustments leading to changed income from tax? – unless it is earmarked
 13. REF would have to be:
 - a. Efficiently administered
 - b. Adequately solvent
 - c. Following good investment strategy
 - d. Have good contribution collection systems

APPENDIX 4

Alternative tax arrangements

Investigating high income individuals

Assume the employee earns R30 000 per month. The total medical contribution is R900. The employer pays a subsidy of R600 on top of the salary. The corporate tax rate is 30%.

Current tax situation:

Total medical contribution =	R900
Employee salary =	R30 000
Employer subsidy =	R600
For employee:	
Medical expenses in excess of 5% of salary = $(900 - 600) - (0.05)(30\ 600) =$	R0
Tax rate =	40%
Primary tax rebate = $5400 / 12 =$	R450
Employee tax = $6175 + (0.4)(8750) - 450 =$	R9 225
Employee net position = $R30\ 000 - 9225 - 300 =$	R20 475
Actual employee net tax rate	30.15%

Hence, Government gets tax of R9225 from employee

Government gives deductions of:	
For employee = $450 + (0.4)(600) =$	R690
For employer = $(0.30)(600) =$	R180
Total deduction =	R870

Government's net position = $9\ 225 - 870 =$ R8 355

Scenario A:

Suppose Government now introduces a new rule stating that employer subsidies are limited to a Rand amount of R400 per employee per month. IF the employer then does not pay the employee an additional R200 cash, the situation is as follows (under scenario C we discuss what happens if the employer pays an additional R200):

Total medical contribution =	R900
Employee salary =	R30 000
Employer subsidy =	R400
For employee:	
Medical expenses in excess of 5% of salary = $(900 - 400) - (0.05)(30\ 600) =$	R0
Tax rate and primary tax rebate remains the same	
Employee tax = $6175 + (0.4)(8750) - 450 =$	R9 225
Employee net position = $30\ 000 - 9\ 225 - 500 =$	R20 275
Actual employee net tax rate =	30.35%

Hence, Government gets tax of R9 225 from employee = **same**
 Government also gets additional employer tax = $(0.3)(200) =$ **R60 more**

Government gives deductions of:
 For employee = $450 + (0.4)(400) =$ R610
 For employer = $(0.3)(400) =$ R120
 Total deduction = R730

Government's net position = $9225 - 730 =$ R8 495

Government gains R140 under Scenario A relative to current tax position.

Scenario B:

Suppose Government indicates the same new rule as under Scenario A (employer subsidy limited to R400 per employee per month) and that, at the same time, the tax allowance relating to expenses in excess of 5% of income is removed. The impact will then be as follows:

Total medical contribution = R900
 Employee salary = R30 000
 Employer subsidy = R400

For employee:
 Medical expenses in excess of 5% of salary n/a
 Tax rate and primary tax rebate remains the same
 Employee tax = $6175 + (0.4)(8750) - 450 =$ R9 225
 Employee net position = $30\ 000 - 9\ 225 - 500 =$ R4 050
 Actual employee tax rate = 30.35%

Hence, Government gets tax of R9 225 from employee = **same**
 Government also gets additional employer tax = $(0.3)(200) =$ **R60 more**

Government gives deductions of:
 For employee = $450 + (0.4)(400) =$ R610
 For employer = $(0.3)(400) =$ R120
 Total deduction = R730

Government's net position = $9\ 225 - 730 =$ R8 495

Government gains R140 under Scenario B relative to current tax position.

Scenario C

As for Scenario A, but where the employer undertakes to spend the same Rand amount on staff costs by adding R200 to the employee's salary.

Total medical contribution = R900
 Employee salary = R30 200
 Employer subsidy = R400

For employee:
 Medical expenses in excess of 5% of salary = $(900 - 400) - (0.05)(30\ 600) =$ R0
 Tax rate and primary tax rebate remains the same

Employee tax = $6175 + (0.4)(8950) - 450 =$	R9 305
Employee net position = $30\ 200 - 9\ 305 - 500 =$	R20 395
Actual employee tax rate =	30.4%

Hence, Government gets tax of R9 305 from employee = **R80 more**
 Government does not get additional employer tax

Government gives deductions of:	
For employee = $0 + 450 + (0.4)(400) =$	R610
For employer = $(0.3)(400 + 200) =$	R180
Total deduction =	R790

Government's net position = $9305 - 790 =$ R8 515

Government gains R160 under Scenario C relative to current tax position.

Scenario D

As for Scenario B (i.e. R400 cash subsidy without deduction for 5% of medical expenses in excess of income), but where the employer pays an additional R200 cash to the employee.

Total medical contribution =	R900
Employee salary =	R30 200
Employer subsidy =	R400

For employee:	
Medical expenses in excess of 5% of salary	n/a
Tax rate and primary tax rebate remains the same	
Employee tax = $6175 + (0.4)(8950) - 450 =$	R9 305
Employee net position = $30\ 200 - 9305 - 500 =$	R20 395
Actual employee tax rate =	30.4%

Hence, Government gets tax of R9 305 from employee = **R80 more**
 Government also gets no additional employer tax

Government gives deductions of:	
For employee = $450 + (0.4)(400) =$	R610
For employer = $(0.3)(400 + 200) =$	R180
Total deduction =	R790

Government's net position = $9\ 305 - 790 =$ R8 515

Government gains R160 under Scenario C relative to current tax position, and the employee's overall tax rate increases from 30.15% to 30.4% (i.e. by R80).

Investigating rebate or Government subsidy from REF

Here we assume that, whilst the current total contribution is R900, under the new dispensation revenue raised from changes in tax rules will be applied to reduce the overall contribution cost to individuals via payments from the REF to medical schemes. We have here made an assumption of a payment from the REF reducing the contribution from R900 to R500, of which the employer then still gives a Rand subsidy of R400.

Current tax situation:

Total medical contribution =	R900
Employee salary =	R5 000
Employer subsidy =	R600
For employee:	
Medical expenses in excess of 5% of salary = $(900 - 600) - (0.05)(5600) =$	R20
Tax rate =	18%
Primary tax rebate = $5400 / 12 =$	R450
Employee tax = $(0.18)(5000) - 20 - 450 =$	R430
Employee net position = $R5000 - 430 - 500 =$	R4 070
Actual employee net tax rate	7.7%

Hence, Government gets tax of R430 from employee

Government gives deductions of:	
For employee = $20 + 450 + (0.18)(600) =$	R578
For employer = $(0.30)(600) =$	R180
Total deduction =	R758

Government's net position = $430 - 758 =$ -R328

Scenario A:

Suppose Government now introduces a new rule stating that employer subsidies are limited to a Rand amount of R400 per employee per month. IF the employer then does not pay the employee an additional R200 cash, the situation is as follows (under scenario C we discuss what happens if the employer pays an additional R200):

Total medical contribution =	R500
Employee salary =	R5 000
Employer subsidy =	R400
For employee:	
Medical expenses in excess of 5% of salary = $(500 - 400) - (0.05)(5600) =$	R0
Tax rate and primary tax rebate remains the same	
Employee tax = $(0.18)(5000) - 450 =$	R450
Employee net position = $5000 - 450 - 500 =$	R4050
Actual employee net tax rate =	8.3%

Hence, Government gets tax of R450 from employee = R20 more
Government also gets additional employer tax = $(0.3)(200) =$ R60 more

Government gives deductions of:	
For employee = $450 + (0.18)(400) =$	R522
For employer = $(0.3)(400) =$	R120
Total deduction =	R642

Government's net position = $450 - 642 =$ -R192

Government gains R136 under Scenario A relative to current tax position.

Scenario B:

Suppose Government indicates the same new rule as under Scenario A (employer subsidy limited to R400 per employee per month) and that, at the same time, the tax allowance relating to expenses in excess of 5% of income is removed. The impact will then be as follows:

Total medical contribution =	R500
Employee salary =	R5 000
Employer subsidy =	R400

For employee:

Medical expenses in excess of 5% of salary	n/a
Tax rate and primary tax rebate remains the same	
Employee tax = $(0.18)(5000) - 0 - 450 =$	R450
Employee net position = $5000 - 450 - 500 =$	R4 050
Actual employee tax rate =	8.3%

Hence, Government gets tax of R450 from employee = **R20 more**
 Government also gets additional employer tax = $(0.3)(200) =$ **R60 more**

Government gives deductions of:	
For employee = $450 + (0.18)(400) =$	R522
For employer = $(0.3)(400) =$	R120
Total deduction =	R642

Government's net position = $450 - 542 =$ -R92

Government gains R236 under Scenario B relative to current tax position.

Scenario C

As for Scenario A, but where the employer undertakes to spend the same Rand amount on staff costs by adding R200 to the employee's salary.

Total medical contribution =	R500
Employee salary =	R5 200
Employer subsidy =	R400

For employee:

Medical expenses in excess of 5% of salary = $(500 - 400) - (0.05)(5600) =$	R0
Tax rate and primary tax rebate remains the same	
Employee tax = $(0.18)(5200) - 450 =$	R486
Employee net position = $5200 - 486 - 500 =$	R4 214
Actual employee tax rate =	8.7%

Hence, Government gets tax of R486 from employee = **R56 more**
Government does not get additional employer tax

Government gives deductions of:
For employee = $450 + (0.18)(400) =$ R522
For employer = $(0.3)(400 + 200) =$ R180
Total deduction = R702

Government's net position = $486 - 702 =$ -R216

Government gains R112 under Scenario C relative to current tax position.

Scenario D

As for Scenario B (i.e. R400 cash subsidy without deduction for 5% of medical expenses in excess of income), but where the employer pays an additional R200 cash to the employee.

Total medical contribution = R500
Employee salary = R5 200
Employer subsidy = R400

For employee:
Medical expenses in excess of 5% of salary n/a
Tax rate and primary tax rebate remains the same
Employee tax = $(0.18)(5200) - 0 - 450 =$ R486
Employee net position = $5200 - 486 - 500 =$ R4 214
Actual employee tax rate = 8.7%

Hence, Government gets tax of R486 from employee = **R56 more**
Government also gets no additional employer tax

Government gives deductions of:
For employee = $450 + (0.18)(400) =$ R522
For employer = $(0.3)(400 + 200) =$ R180
Total deduction = R702

Government's net position = $486 - 702 =$ -R216

Government gains R20 under Scenario B relative to current tax position, and yet the employee's overall tax rate increases by R56.

NOTE: this does not show Government's net position after allocating funds to the REF to subsidise contributions. Government's net position *after* providing a subsidy of R400 to the scheme would be a loss under *all* scenarios for an individual earning R5000 per month. Of course, this overall loss could be mitigated by smaller subsidies to other schemes on the basis of risk equalization formula, and higher levels of increased revenue to Government for individuals earning more.