

**Value of Contracting as a Strategic Purchasing Mechanism
in a Private Health System:
A South African Case Study**



by

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Abstract

Background

Strategic purchasing is a way of ensuring that the healthcare interventions that are provided, improves the health systems responsiveness. Contracting for health services, as a component of strategic purchasing, has been promoted as an important mechanism to improve the efficiency of resource use, quality in health care service provision and increase accountability, all of which contribute towards improving health system performance.

Over the past two decades, many countries have adopted contracting as a mechanism to positively impact the performance of the health system. However, despite the increasing interest and experimentation with contracting as a way to improve health systems, the results remain controversial.

Within South Africa's private healthcare market, medical schemes represent the largest source of private healthcare funding. Given the rate of increase of medical inflation within the South African private healthcare market, there is an absolute need for medical schemes to become more strategic in their purchasing decisions.

Objective

This dissertation aims to address the gaps identified in the contracting literature by providing empirical evidence from an evaluation of a contractual agreement between a healthcare financing agency, medical scheme, and a managed care organisation in the private health sector in South Africa for the provision of a back rehabilitation programme to reduce the cost of back surgeries.

The dissertation also attempts to formulate key learnings that will inform future policies regarding contracting for healthcare services within the private and public health sector in South Africa.

Methods

This case study examines the rationale, key features and outcomes of the contractual agreement in accordance with a previously documented contracting framework. The study was conducted through document review and data analysis comparing the 'pre-intervention' to 'post-intervention' period. The findings relate to the mid-point of the six year contractual term.

Performance indicators specific to the nature of the contract but within key metrics of health system performance as proposed by literature, were derived. Risk-adjustment methods were used to compensate for various differences in factors that would have occurred between various time periods. This is essential to ensure that the accurate measurement and comparison between the time periods is valid and not subject to confounding factors.

The interim results were subsequently compared to literature regarding contracting. The differences and similarities were evaluated and provided the basis for policy recommendation within the context of the South African private healthcare market.

Results

The interim results of the contract, indicates that admission rate and subsequently the cost per life for back surgeries have reduced since the implementation of the contract. More importantly, the total costs of back care have decreased illustrating the efficiency of the contract in terms of cost containment.

In terms of equity of access to care, majority of the membership base have access to a provider of the back programme. For the minority of members who are unable to access the service, these members still have access to previous forms of therapy such as back surgery. In addition, these members are not subject to any punitive measures as contained in the contract.

The improvement in patient-specific clinical markers demonstrates the quality aspects of the conservative programme and hence significantly improving the quality of life for these members. In turn, such an improvement prevents the need for surgery, which has been demonstrated by the decreased admission rate, noted above.

The results of the contract are congruent with the experiences of contracting from around the world regarding access but goes further to demonstrate improved efficiency and quality of care, which other studies do not adequately evaluate.

Limitations

The major limitation of this study is that the results presented are interim in nature i.e. at mid-point of the contract period. Therefore the results to date should be viewed as tentative but serves to indicate that thus far, the contract is of benefit to all three stakeholders. However, it is expected that the results achieved at the end of the contract period would, in fact surpass the interim results presented. This is due to the resolution of certain challenges relating to the implementation of the contract.

Conclusion

The study provides empirical evidence that it is possible to positively influence all dimensions of health system performance i.e. access, equity, quality and efficiency. The results of the contract are congruent with the experiences of contracting from around the world regarding access but goes further to demonstrate improved efficiency and quality of care, which other studies do not adequately evaluate.

It is hoped that, despite the limitations, the results provided by this study, demonstrate the principles in which contracting of healthcare services could be applied within the medical scheme industry to 'bend the cost curve' and ensure sustainability of this major source of healthcare finance in South Africa.

Policy Implications

At present majority of the existing contracts concluded by medical scheme focus on cost and access. However, there is a need for medical schemes to consider all dimensions of health system performance and not focus solely on cost to impact the overall health system performance.

In order to address the shortcomings of the current contractual agreements concluded by medical schemes, it is recommended that a review of the prevailing contracting legislation is undertaken to create an enabling environment whereby health services are procured on the basis of quality, efficiency, equity and access. Furthermore, allowances should be made for selective contracting of providers to encourage competition and efficiency. Finally, the Council of Medical Schemes, as the custodian of the medical scheme industry, should actively promote the use of contracts as a strategic mechanism for the purchasing of health services by medical schemes.

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Reference Methodology

I have used the Harvard style of referencing for all parts of this dissertation, and Refworks as the application programme for the compilation of references. There are some variations in Refworks application of the bibliography when compared to available guidelines to Harvard referencing. Since Refworks is a recommended University of Cape Town reference system, the output regarding Harvard reference system, has not been changed.

The referencing style for the journal manuscript followed the instructions provided by the journal selected i.e. Health Policy and Planning. There is a minor variation in Harvard style of referencing of this journal compared to the instruction published on the University of Cape Town's website.

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Part A: Protocol

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Introduction

The Function of Purchasing in Healthcare Financing

The role of healthcare financing within health systems is centred around ensuring that sufficient funding is available to cover the costs associated with the utilisation of healthcare services as well as to set the right incentives for providers such that individuals will have access to the appropriate healthcare services. (WHO, 2000)

Healthcare financing relates to three main functions (Kutzin, 2001):

Revenue collection: Relates to the possible sources of funds, methods by which these funds are collected as well as the collection organisations.

Pooling of Funds: Refers to the accumulation of the collected funds on behalf of the population and the management of these funds insofar as distributing the healthcare risks amongst all members of the pool.

Purchasing: Relates to the transfer of pooled resources to healthcare providers on behalf of the population so that appropriate and efficient services are available.

Purchasing is regarded as a mechanism by which those who hold financial resources allocate them to those who provide health services (Perrot, 2002). Purchasing can either be undertaken in a passive or strategic manner.

Passive purchasing implies following a predetermined budget or simply paying the bills when presented. In contrast, strategic or active purchasing involves a continuous search for the best ways to maximise health system performance. (Busse et al., 2007)

Strategic purchasing can be defined as “an organised attempt by a private or public sector purchaser to ensure quality and to improve health outcomes, as well as negotiating prices , as an explicit part of the its health care buying strategy¹”. (Kindig, 2001)

Therefore strategic purchasing involves a set of three explicit and active decisions: (WHO, 2000)

1. Identifying which interventions or services should be purchased to meet the population needs
2. Selecting providers from whom these services will be purchased
3. Deciding how these services should be purchased

The World Health Organisation (WHO, 2000) recommended that countries move from passive purchasing to strategic (or active) purchasing of healthcare services. This recommendation is predicated on the shortcomings associated with passive purchasing. Such shortcomings include information asymmetries between the providers of healthcare services and consumers of this service. In addition, consumers of healthcare i.e. the patients have limited ability to interpret the clinical-related matters associated with the health information to subsequently make informed decisions based on this information. Finally, majority of incentives and regulations are in favour of the supply side of the market e.g. provider payment mechanism such as fee-for-service that has been demonstrated to cause over servicing.

Evidence from China (Liu et al., 1999) and Korea (Yang, 1997) clearly highlight the inefficiencies associated with passive purchasing, which is due to provider-led cost escalations.

Strategic purchasing will enable purchasers to overcome these shortcomings and link resource allocation decisions to provider performance thus encouraging providers to pursue efficiency and quality in service delivery. (Busse, 2007) Therefore the focus of strategic purchasing is enable purchasers move beyond the routine payment of healthcare services to

¹ While the definition was in reference to value purchasing, it is appropriate to strategic purchasing

achieving 'more health for money' (improving the efficiency and equity in the use of pooled funds)

There are various mechanisms that could be employed in the practical application of strategic purchasing aimed at linking resource allocation decisions to provider performance. These range from the utilisation of a variety of provider payment mechanisms such as capitation, fixed fees and global fees, to the restriction of access of specialised levels of care based on a referral from a primary care provider. (Kutzin, 2001)

Other mechanisms include limiting the choice of service providers available to patients, whereby costs associated with health care services will only be covered, if obtained from these designated or preferred providers as well as establishing standard care pathways or guidelines for the treatment of ailments to ensure that services are aligned in order to promote uniformity and quality. Thereafter, based on the services provided, each provider service is assessed in terms cost and quality as part of utilisation reviews. The outcome of these reviews will be used as part of the feedback to these providers on their respective quality and costs and potentially used to reward or restrict payment for these services.

It is clear that while these mechanisms can be applied individually, greater synergistic value can be derived if applied concurrently in a coordinated fashion as evidenced by the UMASIDA scheme in Tanzania. (Kiwara, 1997)

Many of the mechanisms of strategic purchasing are dependent on a pre-agreed arrangement between the purchaser and provider. Such an agreement can take the form of a contract defined as "a purchasing mechanism used to acquire a specified service of a defined quantity and quality at an agreed-on price from a specific provider for a specific period ". (Taylor, 2003)

Contracting has the potential to creating incentives to improve the distribution, utilisation and cost-effectiveness of health services. Ashton et al. (2004) notes that some of the benefits of contracting include increased focus on quantity, quality and costs of services. In addition, there is promotion of technical efficiency in terms of health service delivery on the part of the provider and improvement in allocative efficiency in terms of setting of priorities on the part of the purchasers. Over the past 15 years, many developing countries have introduced reforms within their health systems, premised on the benefits of contracting (Liu et al., 2007a), hence suggesting the popularity of contracting as the tool for reform.

Despite increasing interest and experimentation with contracting as a way to improve health systems, the results of contracting remain controversial. Mills and Broomberg (1998) conducted the earliest review of the effectiveness of contracting, and concluded from the cases a mixture of results, where on one hand, services could be provided at a lower cost for the same or higher level of quality, yet on the other hand, there were no difference in the level of service between contracted and non-contracted service providers.

The review conducted by England (2004) was focused on establishing the value of contracting in terms of access to services amongst the poor. However, England found that few of the cases under review were subjected to proper evaluation and therefore did not make conclusions on the impact of contracting as a tool to improve access.

Loevinsohn and Harding (2005) conducted a review of 10 developing country cases and concluded that contracting for primary care services can be effective and improvements can be rapidly achieved and ultimately contracting should be expanded and subsequently evaluated.

In the review of 16 cases conducted by Liu et al., (2007a), the authors concluded that contracting has resulted in improved access to health care services, however the evidence on other aspects of performance such as equity, quality and efficiency was unknown. The success of contracting is hugely dependent on the context in which it is implemented and the specific design features of the contract.

South African Medical Scheme Industry

Funding of healthcare services delivered through South Africa's private sector comprise of medical scheme premiums, out-pocket payments, medical insurance premiums, employers, donors/non-governmental organisations and non-profit organisations. The largest private sector source of health financing is through medical scheme membership.

The Council for Medical Scheme's annual report 2011/12 states that the medical scheme industry received R106, 7 billion in contributions in 2012. In terms of Section 1 of the Medical Schemes Act, 1998, the "business of a medical scheme", means the business of undertaking liability in return for a premium or contribution –

- (a) to make provision for the obtaining of any relevant health service;*
- (b) to grant assistance in defraying expenditure incurred in connection with the rendering of any relevant health service; and*
- (c) where applicable, to render a relevant health service, either by the medical scheme itself, or service, either by the medical scheme itself, or by any supplier or group of suppliers of a relevant health service or by any person, in association with or in terms of an agreement with a medical scheme.”*

Figure 1 below, depicts the framework proposed by Kutzin (2001) that could be applied to explain the generic functions relating to the business of medical schemes. The population of medical schemes comprise of individuals who contributes premiums on pre-payment basis to the scheme, either directly or indirectly through their employers. In turn, only these individuals will derive a benefit entitlement in terms of defrayment of expenses related to healthcare services.

All contributions are pooled by the medical scheme on behalf of the beneficiaries of the medical scheme and the benefit design signifies the extent of coverage for health care service costs. Typically, historical claiming patterns are used to allocate benefits to the insured population. Most commonly, purchasing of services is done by individuals as their personal needs of healthcare services demand. The medical scheme then reimburses the treating provider for the service.

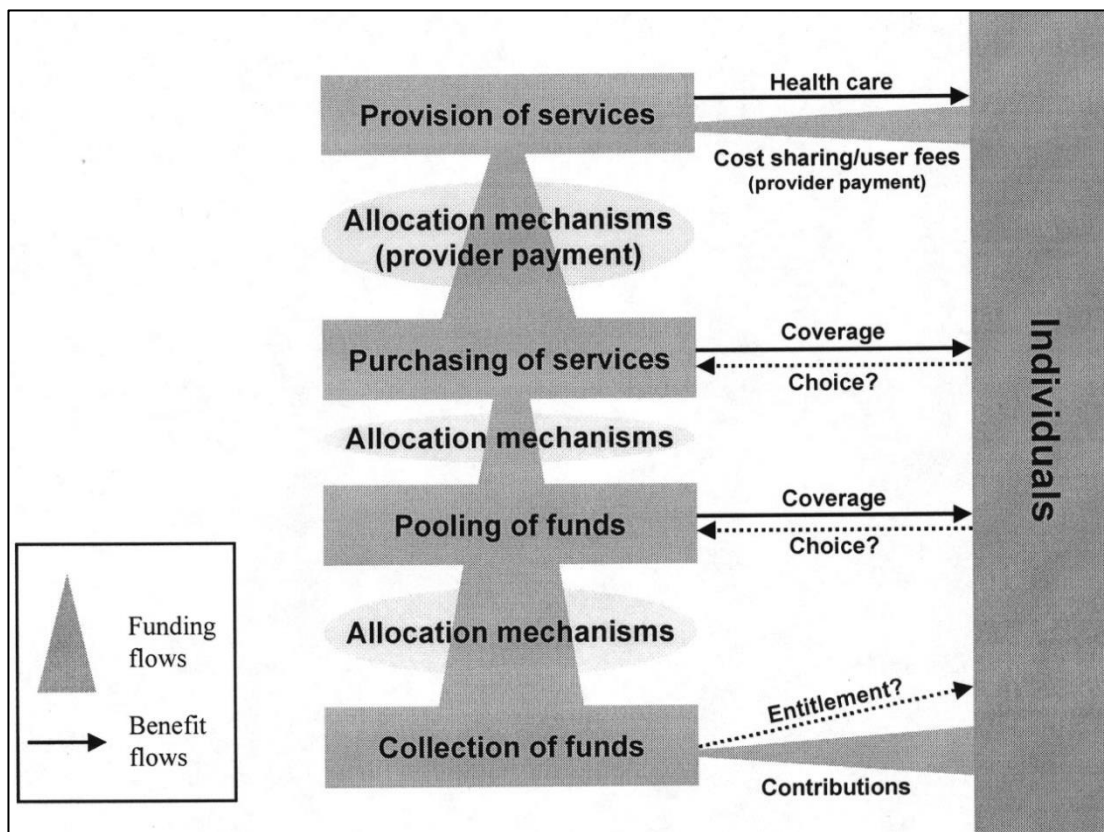


Figure 1: Framework: health system financing functions and population links.(Kutzin, 2001)

In South Africa, the traditional model of managing medical scheme benefits through a combination of benefit design and funding rules have reached a stage of maturity where greater cost management is difficult to achieve without sacrificing quality of care. Typically, most provider-payment mechanisms comprise of passive purchasing i.e. fee-for-service. This has resulted in supplier-induced demand and is one of the contributing factors of medical inflation which exceeded general inflation by 2.3% between 2000 and 2012. (Bhana et al., 2014)

Therefore, a different model is required, one in which medical schemes contract more closely with the providers of medical services to ensure improve ‘value for money’ outcomes. In this way, incentives are aligned promoting efficiencies within the healthcare system for the funder, medical scheme, healthcare provider and members of the medical schemes.

Sasolmed

Sasol is an international integrated energy and chemical company that was established in South Africa in 1950. The company develops and commercialises technologies, as well as build and operate world-scale facilities to produce a range of product streams, including liquid fuels, high-value chemicals and low-carbon electricity. The company is listed on the Johannesburg Stock Exchange in South Africa as well as on the New York Stock Exchange in the United States of America. (Sasol, 2014)

As a condition of employment, all employees of Sasol must become members of the medical scheme, Sasolmed. Sasolmed was established in 1971 and membership is limited to only employees of Sasol Limited or any subsidiary or associated company of Sasol Limited i.e. closed medical scheme.

Sasolmed comprises of approximately 30 000 principal members and 40 000 dependents, to provide a total membership base of 70 000 beneficiaries. (CMS Annual Report 2012/13). Members of Sasolmed enjoy unlimited cover for hospitalization, general practitioner and specialists consultations, while limited cover for ambulatory benefits such as medication, dental and optical services as well as pathology and radiology.

Since most often, membership to closed schemes is a condition of employment, closed schemes tend to have stable a membership pool with predictable claims patterns. Therefore benefits and contributions can be customized to the needs of the members. However, crucially important is the fact that the healthcare needs analysis must also take the perspective of the member as an employee since the provision of benefits will have direct impact on the well-being and subsequent productivity of the employee.

Sasolmed experienced a year-on-year increase in the cost of back surgery due to an increase in admission rate of approximately 7% per annum since 2006. Approximately 30% of patients, who undergo initial surgery, will require repeat surgery in 4 year following the initial surgery, as back problems were often not resolved. The cost of back-related hospital admissions in 2009 was approximately R32 million, almost 4% of total claims.

Back surgery was fast becoming a major cost driver for Sasolmed and one that required immediate focus by the Scheme. In addition, back surgery represented a significant source of both absenteeism and “presenteeism” (where employees are at work but not able to fully

perform their jobs) for Sasol. Back surgery further requires a long recuperation period, which means even higher absenteeism costs for the employer. Hence the need to address the costs associated with back surgery from both an employer and medical scheme perspective.

With over 400 lives hospitalised each year for back-related surgery, Sasolmed was open to alternative solutions to reduce the costs of back surgery, while ensuring that alternatives were at least as effective and accessible as the prevailing form of treatment. DBC Risk Management (DBC RM), a managed care company with a network of DBC clinics, approached Sasolmed offering conservative out-of-hospital back rehabilitation programme. The treatment protocols, processes and equipment were imported from Finland, where it has been successfully applied in managing chronic back pain conservatively. DBC RM was confident enough in their methodology that they were willing to enter into a risk sharing contractual arrangement which Sasolmed was willing to consider.

Chronic Lower Back Pain

Chronic lower back pain (CLBP) is defined as low back pain persisting for at least 12 weeks. Lower back pain refers to pain and discomfort in the lower region of spine known as the lumbar region. (Airaksinen et al., 2006) Those afflicted with CLBP make up the minority of back pain sufferers, but because of costs related with repeated treatment, long term work absence and social support, they account for the majority of economic costs related to back pain. (Taimela et al., 2004) While exact data on prevalence of CLPB is limited, best estimates approximate the prevalence to be in the region of 23% of the population with 11% to 12% being disabled by low back pain. (Airaksinen et al., 2006)

There are a number of treatment modalities available for CLBP that range from non-invasive therapy such as cognitive therapy, exercise therapy, educational interventions, back school and short courses of spinal manipulations, to invasive interventions such as acupuncture, intra-articular corticosteroid injections and local facet nerve blocks. In addition, pharmacological treatments are prescribed to alleviate pain and relax the muscles.

However, despite the available range of treatment modalities, the outcomes have remained the similar to those noted thirty years ago. (Turk, 2011). Therefore a shift in the treatment paradigm is required, where the approach is rather one focused on holistic and multidisciplinary rehabilitation and not the traditional reductionist biomedical approach.

Guzman et al., (2001), defines multidisciplinary biopsychosocial rehabilitation as the minimum of the physical dimension and one of the other dimensions (psychological or social or occupational).

Documentation Based Care Clinics

One example of where this multidisciplinary approach is practised is within the international network of clinics known as Documentation Based Care (DBC). The treatment follows a specific care pathway that was developed in Finland. Evidence has demonstrated that by combining disease education and medical exercise with conventional conservative treatment measures, the number of chronic back pain cases in Finland decreased substantially, almost fifty percent, over the past twenty years. (Heistaro et al., 2007).

The network of DBC clinics has expanded to operate in more than 27 centres at 22 locations throughout the world. DBC clinics were first established in South Africa 2004. There are currently eight clinics in South Africa, situated in the major metropolitan areas. All centres adopt the same systematic approach, quality control, centralised training, common tools and continuous communication to ensure that the evidence-based guidelines are applied uniformly in every clinic.

The comprehensive treatment programme is delivered by a multi-disciplinary team at a DBC clinic consisting of a general practitioner, physiotherapist and biokineticist. Collectively, the team applies the treatment guidelines which entail the use of active motion and careful progressive loading on specially designed training devices aimed to eradicating pain while strengthening and improving flexibility, endurance, coordination and control of the spine.

Health outcomes, based on a variety of measures, including changes in pain control, range of motion and interference with activities of daily living are continuously monitored. The results of evaluations and progress checks are presented with the DBC software as verbal, numerical and graphical reports.

Justification

Strategic purchasing has the potential to play a key role in determining the overall performance of health systems. Within the ambit of strategic purchasing, contracting has been identified as a mechanism to improve health system performance.

This particular contractual arrangement was selected as the basis of this research as it represents a unique agreement within the medical scheme industry between a medical scheme and managed care company. Other medical schemes in the industry do provide cover for services rendered at a DBC clinic but importantly, under a 'fee-for-service' arrangement.

In addition, the terms of the contractual arrangement are novel. Typically, most contracts between funders and healthcare providers within the South African medical scheme industry are based on a pre-arranged rate for services whereby no co-payments charged to patients. (Still, 2014) The contract arrangement between Sasolmed and DBC RM overcome the negative consequences of the pre-existing 'fee-for-service' environment by incorporating elements of access, efficiency, quality and equity of care related to the treatment of chronic back conditions.

Finally, Sasolmed as a medical scheme was appropriate choice to enter into such an agreement due to its need for an alternative solution to reduce the cost of back surgery. Furthermore, with 70% of the Sasolmed members residing within specific areas such as Sasolburg and Secunda, the solution provided by DBC RM, could be tailored to the needs of majority the membership base, in terms of access of care.

This research therefore aims to contribute to the body of knowledge regarding the effectiveness of contracting on health system performance by evaluating the impact of a contractual arrangement between a South African private medical scheme, Sasolmed and a managed care company, DBC Risk Management (DBC RM).

Aims

The proposed study aims to critically assess the value of a contracting arrangement, as a mechanism of strategic purchasing, between Sasolmed and DBC RM in an effort to attenuate the cost escalations associated with back surgery, three years after implementation. This represents the mid-point contractual term.

Research Objectives:

In order to assess the degree of success of the specific contractual arrangement, the specific goals of this study are to:

1. Understand the rationale/background and review the key features of the contractual arrangements between Sasolmed and DBC RM for the treatment of CLBP
2. Review the degree of success of the programme from clinical and financial perspectives since inception of the programme (August 2010 until July 2013). The specific evaluation criteria are:
 - a. Access
 - b. Quality
 - c. Efficiency
 - d. Quality
3. Explain the underlying factors that have led to observed contractual outcomes.
4. Provide formative information for policy makers, service providers and administrators to promote the correct application of contracting within in health systems.

Proposed Methods:

Conceptual Framework

In order to understand the various components of contracting of health services, the study will utilise the framework proposed by Liu et al., (2004), which comprises of four includes four extensive and mutually interactive types of information that should be considered in the evaluation of contracting reforms.

The four extensive and mutually interacting types of information are (Liu et al., 2007b):

1. *Features of the intervention, including those of the contractor, provider, and the nature of contractual relationship*

There are two parties involved in the contractual relationship i.e. purchaser or contractor and the provider or agent or contractee. The purchaser's responsibilities within the contract relates to financing as well as stewardship of the contract which include procurement, oversight, performance assessment and payment. The provider's responsibility relate to the provision of the services that have been contracted to. Characteristics of the contractual relationship that require consideration are:

- a) The type of services or benefits covered by the contract
- b) The formality of the contract
- c) The duration of the contract
- d) The selection of the contract
- e) The specification of performance requirements
- f) The payment mechanism

2. *The external environment*

The external environment refers to the context surrounding the contracting initiative. More specifically, this refers to the structure of the health sector and financial sector, with due consideration for the legal framework within which these sectors operate.

3. *The response of the providers both within and outside the contracting scheme*

The effectiveness of the contracting initiative ultimately depends on the level of cooperation between the purchaser and provider. The changing behaviour of the purchaser and provider due to the conditions of the contract are critical for the understanding of the mechanisms through which contracting affects health system performance and also predicting the effects of contracting.

4. *The impact of the contracting intervention*

The ultimate goal of the contract is to affect performance of the health system and therefore a natural consideration would be the success in the attainment of this goal. Performance would be evaluated on four dimensions

- a) Access: The presence or absence of barriers (logistical, physical, cultural or economic) faced by those seeking health services
- b) Quality: Defined by Donebedian (1964) in terms of structure, process and outcomes
- c) Equity: Refers to the fairness in the distribution of health care services or access to these services. (Braveman, 2006)
- d) Efficiency: Refers to the relationship between inputs and outputs. There are two types of efficiencies:
 - a. Technical efficiency: Providing inputs to obtain the maximum number of outputs i.e. “doing things in the right way”
 - b. Allocative efficiency: Allocation of resources amongst different types of outputs i.e. “doing the right thing”

Figure 2 presents an outline of the components for consideration in contracting-out reforms

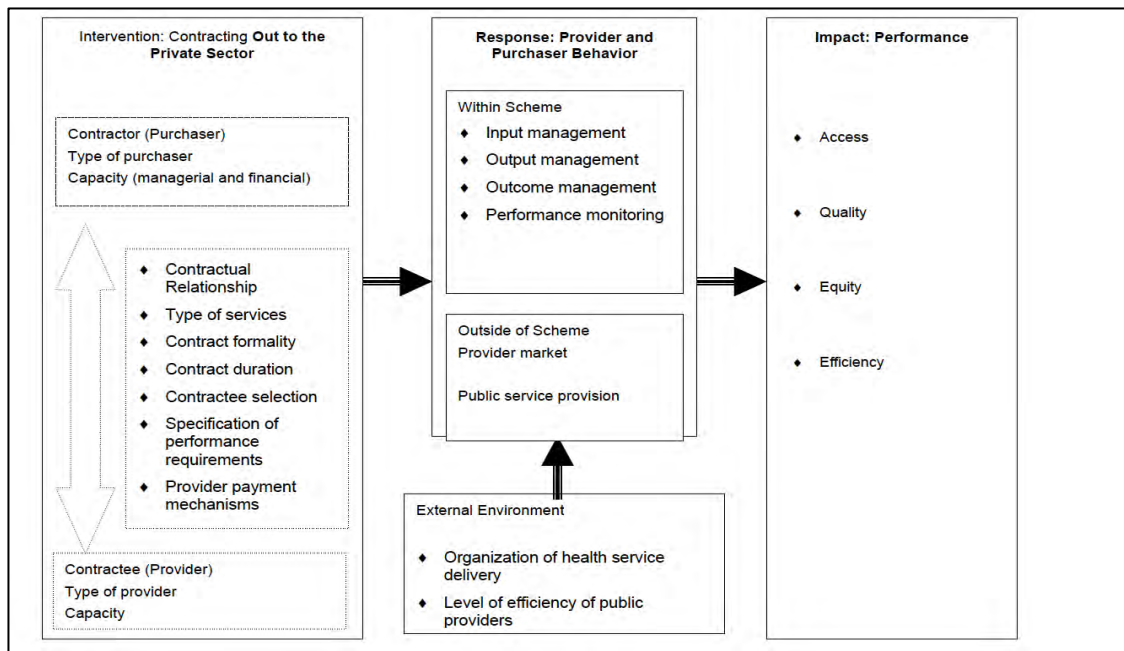


Figure 2: A framework for evaluating contracting-out of health services (Liu et al., 2004)

Previous evaluations of contracting-out projects most often only considered one dimension of success in terms of access on health services while less frequently considered are the dimensions of equity and access. There is little evidence of contracting on quality and efficiency. (Liu et al., 2004) Evaluation of contracting-out initiatives must consider all these dimensions of health system performance to ensure that one dimension has not improved at the expense of another.

In addition to these dimensions of evaluation, which are essentially end-points, a critical component of any contracting-out initiative must be the starting points. These include comprehensive details regarding the environment in which the initiative was implemented as the intervention's design and characteristics. This information is critical when evaluating the success or failure of the initiative as outcomes reported without contextual information is meaningless.

Cross-project or cross-country contracting-out initiatives require standardized information containing common variables to facilitate comparisons and subsequently make inferences for successful criteria for contracting initiatives.

The framework proposed by Liu et al., (2004) overcome these problems by ensuring that the four types of information to be considered in the evaluation of contracting-out initiatives are broad and not prescriptive in terms of methods or specific indicators of evaluation.

Study Design

The descriptive case study method has been selected as the most appropriate research method as it allows for the study of a single instance of an experience within a “real world” setting for a pre-defined period of time. (Yin 1994).

Furthermore, George and Bennet (2004) state that the one of the advantages of the case-study methodology is that it allows for the exploration of causal mechanisms in considerable detail. Within a single case, a large number of variables can be considered and help identify the necessary conditions presented in the case to realise the result of the causal mechanism.

The contractual agreement between the two parties, Sasolmed and DBC RM as a mechanism to reduce the costs associated with back surgery is the “case” in the study i.e. the form of the contract and the breadth of the services being contracted. The selection of the descriptive case study methodology is justified due to the intention of this research which is intended to describe the intervention i.e. contractual agreement and the real-life context in which it was applied.

The following quote from Schramm in 1971 (Yin, 2004) succinctly sums up the application of case study as a research strategy within this proposal:

“The essence of a case study, the central tendency among all types of case study, is that it tries to illuminate a decision or set of decisions: why they were taken, how they were implemented and with what result”.

In order to explore and answer the questions posed by Schramm, the following units of analysis have been selected:

1. Prevailing environment
2. The form and nature of the contract as well as the breadth of the services being contracted

3. The transfer of risk and provider payment mechanisms
4. Institutional and organizational capacity
5. Outcomes of the this “contracting” initiative

Data Collection

There are multiple sources of evidence that can provide data for the case studies. The key in analysing the case study would be the use of evidence from multiple sources to triangulate the information and assess if the results converge on the same result.

Data regarding the contractual arrangement will be gathered through document review and archival records.

Documents Review:

1. The signed contractual agreement between Sasolmed and DBC RM, that forms the mainstay upon which the various aims of this case study have been based.
2. Supplementary reports such as annual clinical outcomes reports and ad-hoc progress reports will also be evaluated

Archival Records:

1. The case study commences with establishing the need for a strategic purchasing mechanism to reduce the costs associated with back surgery. Therefore it is necessary to access and evaluate records relating to the clinical and financial impact of back surgery for Sasolmed prior to the implementation of the contractual agreement.
2. The case study aims to evaluate the results of the contractual agreement in terms of the reduction in incidence of back surgery and the associated decrease in costs. Therefore the database of in-hospital and out-of-hospital claims will be analysed to assess the outcomes of the agreement.

The organisation and documentation of the evidence collected for the case study will be consolidated within a database. This database will thus increase the reliability of the entire

case study. (Yin, 2004) The various documents and data extracts e.g. claims data collected during the course of the study, will be referenced in the bibliography.

The case study will reference pertinent aspects of the case study database. In addition, the availability of the database will allow for subsequent inspection and perusal. Furthermore, all information will be arranged in a chronological order for ease of interpretation.

All conclusions of the study will be evaluated against the evidence from the data sources, collected specifically to answer the research questions. As such, it should also be possible to trace the steps of the study questions through to methodology and finally, the conclusions.

Data Analysis

The study will follow an interpretative approach by means of applying the framework (Liu, 2004) to the various sources of data collected. The framework supports a comprehensive and standardised evaluation of contracting of health services. Therefore there will be strong reliance on the application of this framework to the case to evaluate the multiple attributes that comprise the contents and outcomes of the contracting intervention, in order to achieve the objectives of the study.

Achievement of objective 1 of the proposed study will elucidate the prevailing context prior to the implementation of the contractual agreement that ultimately necessitated the establishment and conclusion of such an arrangement. Such pre-contract contextual factors include:

1. Demographics trends of the Sasolmed population
2. Prevalence trends of first-time and repeat back surgery for Sasolmed
3. Total cost of back surgery including costs per service provider such as hospital and surgeon
4. Payment mechanism per providers
5. Projection of future cost of back surgery

England (2000) provides the basic specification of a contract which will be used as the basis to describe the terms and conditions of services being contracted between Sasolmed and DBC RM. The key aspects of the contract that will be described are:

1. Preamble: Purpose of the contract, objectives and signatories
2. Contract period: Duration of the contract and terms for renewal
3. Summary content: Key obligations and undertakings of each party
4. Levels of service and access: Breadth of services that will be delivered as well as the defining who are eligible for access to the service.
5. Quality Standard: Definition of the service level standards
6. Finance: Terms relating to the financial arrangement including financial liabilities of each signatory
7. Terms of the agreement:
 - i. Monitoring and review – process and periodicity of formal reviews
 - ii. Variations to the agreement – procedure to amend the agreement
 - iii. Best endeavours – signatories should intend to resolve matters without arbitration
 - iv. Arbitration – Process of dispute resolution
 - v. Statutory regulations – Each signatory must act in accordance with the relevant legislation
 - vi. Confidentially – patient-related information to be assured
 - vii. Payments – Terms of payments

The contractual agreement was initiated as a mechanism to reduce the costs of back surgery incurred by Sasolmed. There are three main stakeholders affected by the contractual arrangement i.e. Sasolmed, DBC RM and Sasolmed members. Objective 2 seeks to assess the outcomes of this contractual arrangement in relation to the specific objectives of key stakeholders of this contract within the performance dimensions of access, equity, quality and efficiency. Data from the pre- and post-implementation periods will be analysed to establish the outcomes of the arrangement.

Objective 3, subsequently aims to postulate the factors that have led to outcomes of the contracting arrangement. It is acknowledged that there may be other elements within the health system that may affect the outcomes thereby making causality difficult to establish.

Specific documents, such as Sasolmed scheme rules, benefit schedules, annual clinical outcomes reports, clinical risk reports, quarterly profit calculations reports, supplemented with specific aggregate and individual patient data, will be examined separately to identify and

investigate unique issues as they have materialised during the implementation and progress of the contract.

The data analysis is premised on the basis of comparing actual results and events that have transpired against the theoretical framework. The multiple sources of information will allow for triangulation of the data to assess if the results converge on the same conclusion.

Objective 4 will be achieved by comparing the interim results to literature regarding contracting. The differences and similarities will be evaluated and provide the basis for policy recommendation within the context of the South African private healthcare market.

Ethical Considerations

This study protocol will be submitted to the University of Cape Town's Faculty of Health Sciences Human Research Ethics Committee for review. The proposed study will be guided by the ethical guidelines set out in both the Declaration of Helsinki (World Medical Association [WMA], 2012) and the Belmont Report (US Department of Health, Education, and Welfare [DHEW], 1978). Ways in which this will be ensured in the proposed study are set out below.

Informed consent to access and analyse the contract, reports and claims data from the database of Sasolmed relating to Sasolmed members, will be obtained from the Principal Officer of Sasolmed and the Chief Executive Officer of DBC RM. Confidentiality of scheme-specific information will be emphasized and the outcomes will be report at an aggregate level.

Since the analysis of the contract will include evaluation of claims relating to healthcare services, there is a potential to relate claims to specific individuals however, this risk will mitigated as the data extracts will be de-identified. All data extracts will be cataloged in a database that will be password-protected. The password will only be known to the researcher and amended from time to time.

The researcher is an employee of Medscheme, which is the administration and managed healthcare service provider to Sasolmed. Therefore in addition to the ethical considerations

above, the researcher is also bound by contractual employment obligations that extend to treatment of sensitive scheme-specific information.

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Part B: Structured Literature Review

Introduction

The present study aims to explore the value of a contracting arrangement, as a mechanism of strategic purchasing, in reducing the costs associated with back surgery of a private health insurer in South Africa.

An overview of healthcare financing, including the three functions i.e. collection, pooling and purchasing is provided. Empirical case studies are included to enhance and develop the prevailing theories. There is a focus on strategic purchasing as contracts are deemed to be one of the mechanisms of strategic purchasing.

This literature review then focuses on contracting of health care services. The review aims to highlight the following key components of contracting from the literature:

1. An overview of contracting
2. The theoretical rationale to contract health services
3. Considerations of contracting:
 - a. What interventions should be contracted?
 - b. How should these interventions be contracted?
 - c. From whom should these interventions be contracted?
4. Key contractual elements
5. Success factors of contracting

The theory is supplemented with case-studies from country experiences regarding contracting of health services. The literature review concludes by summarising the current gaps in empirical evidence regarding contracting.

Methodology

In order to obtain the relevant literature on the aforementioned topics, an extensive review of subject matter was undertaken, which included peer-reviewed journal articles as well as grey literature identified on web sites, including those of WHO (www.who.int/management/resources/finances/en), the World Bank (<http://web.worldbank.org/>), Partnerships for Health Reform (<http://www.phrplus.org/>).

The search strategies undertaken involved systematic searches of the data base platforms of Pubmed and EBSCO Host and Google Scholar using keywords relating to the pertinent topics. Such key words included: “healthcare financing”, “healthcare purchasing”, “active or strategic purchasing in health care”, and “contracting in healthcare.”

While the concept of contracting in healthcare can be traced back to the 1980’s, this form of purchasing has been extensively studied towards the end of the last century, going into the current century. Therefore, to ensure completeness and comprehensiveness of the literature review relating to the concept of healthcare contracting, articles published in the last twenty-five years were favoured. However, there was a limitation regarding the use of publications to English and full text articles.

Literature Review

The first section of the review describes Healthcare Financing in general and comprises of three subsections namely “Revenue Collection”, “Pooling” and “Purchasing.”

The second section then elaborates on the concept of Purchasing by focusing on Strategic Purchasing and the potential benefits.

The third section focuses on Contracting and comprises of subsections “Nature of Contracts”, “Contracting Processes”, “Key elements of Contracts” and “Success factors”

Health Financing

“The purpose of health financing is to make funding available, as well as set the right financial incentives for providers, to ensure that all individuals have access to effective public health and personal health care without incurring financially catastrophic costs that may result in impoverishment.” (WHO, 2000)

The policies of the health financing system can directly influence the three goals of universal health coverage i.e. utilisation health services based need, provision of quality care and financial protection against the cost of care. Furthermore, Kutzin (2013) illustrates that the

structure of health financing system, affects the three intermediate objectives of universal health coverage i.e. equity in resource distribution, efficiency, transparency and accountability which in turn, affects the goals of universal health coverage. Therefore countries wanting to transition to universal coverage can reform the financing of their health system to affect any one of these six areas of universal coverage.

During the last decade, there has been increased focus on the role of healthcare financing in facilitating 'healthcare for all'. In 2005, the WHO passed resolution, WHA 58.33 for Sustainable Health Financing, Universal Coverage and Social Health Insurance, whereby member states were urged to:

- 1. Ensure that healthcare-financing mechanism included a form of pre-payment of financial contributions to ensure risk-sharing amongst the population and avoid catastrophic costs that push individuals below the poverty line*
- 2. Ensure the adequate and equitable distribution of resources, both infrastructure and healthcare personnel, to assure the quality and equity of health services*
- 3. Ensure that donor funds are used in a responsible manner that promotes sustainable financing mechanisms for the entire health system*
- 4. Plan for the transition to universal coverage whereby the health-related needs of the population are addressed and quality of care is improved without exposing the population to undue financial stress and poverty.*

This was followed by the publication of the World Health Report 2010 that focused exclusively on the Health System Financing reforms to enable countries to move towards universal coverage. The report identified three root causes that hampered countries from moving closer to universal coverage:

1. Availability of resources
2. Reliance on out-of-pocket payments
3. Inefficient and inequitable use of resources.

The report subsequently recommends three strategies to overcome these barriers through the reforms in health financing:

1. "more money for health" i.e. raising more funds
2. "strength in numbers" i.e. increased coverage of number of people

3. “more health for money” i.e. improved efficiency and equity regarding the use of funds².

Finally, the report acknowledges that all countries reforming their health financing system in the quest to achieve universal coverage cannot follow a standard and prescribed pathway. Each country based on its unique circumstances and priorities would have to formulate its own pathway. However, countries can plan and subsequently review their reforms within the universal coverage “cube” framework i.e. population, cost and service. (WHO, 2010)

By measuring the range of services provided, proportion of costs that are funded and the proportion of the population benefitting from these services, a clear picture regarding the status of universal coverage of the health system will emerge. This will then allow countries to determine appropriate reforms given their specific economic, social and political contexts.

Measuring the ability of a health system to provide financial risk protection or conversely, avoid of financial hardship has been the focus of researchers for years. (Saksena, 2014) The trade-offs that people make when having to pay for health services required and needing to pay for other basic necessities such as food, reflects the degree of financial risk protection of a health system. Financial protection, which is a goal of universal coverage, ensures that individuals do not need to make the choice between health care and other basic needs.

McIntyre et al., (2013) reviewed the health financing reforms of seven countries attempting to transition to universal coverage. Costa Rica and Thailand were reported to have made the greatest progress towards achieving universal coverage. All seven countries followed the recommendation of the WHO (2010) and attempted to reduce the dependence on out-of-pocket payments for care. In some countries such as Tanzania, Georgia and India, funding was split amongst a few pools hence minimizing the benefits of income and risk cross-subsidies. The review reiterates the fact that each country will determine its own path and pace towards universal coverage.

² this strategy calls for actions on areas than extend beyond health financing

Functions of the Health Financing System

Kutzin (2001) proposed a framework to assess the key functions of a health financing system. The financing of health comprises of three interrelated functions, namely revenue collection, pooling and purchasing.

The depiction of the framework, Figure 1, aims to highlight the flow of pooled funds within health financing system as well as the interactions between each function of the health financing system and the individuals that comprise the population.

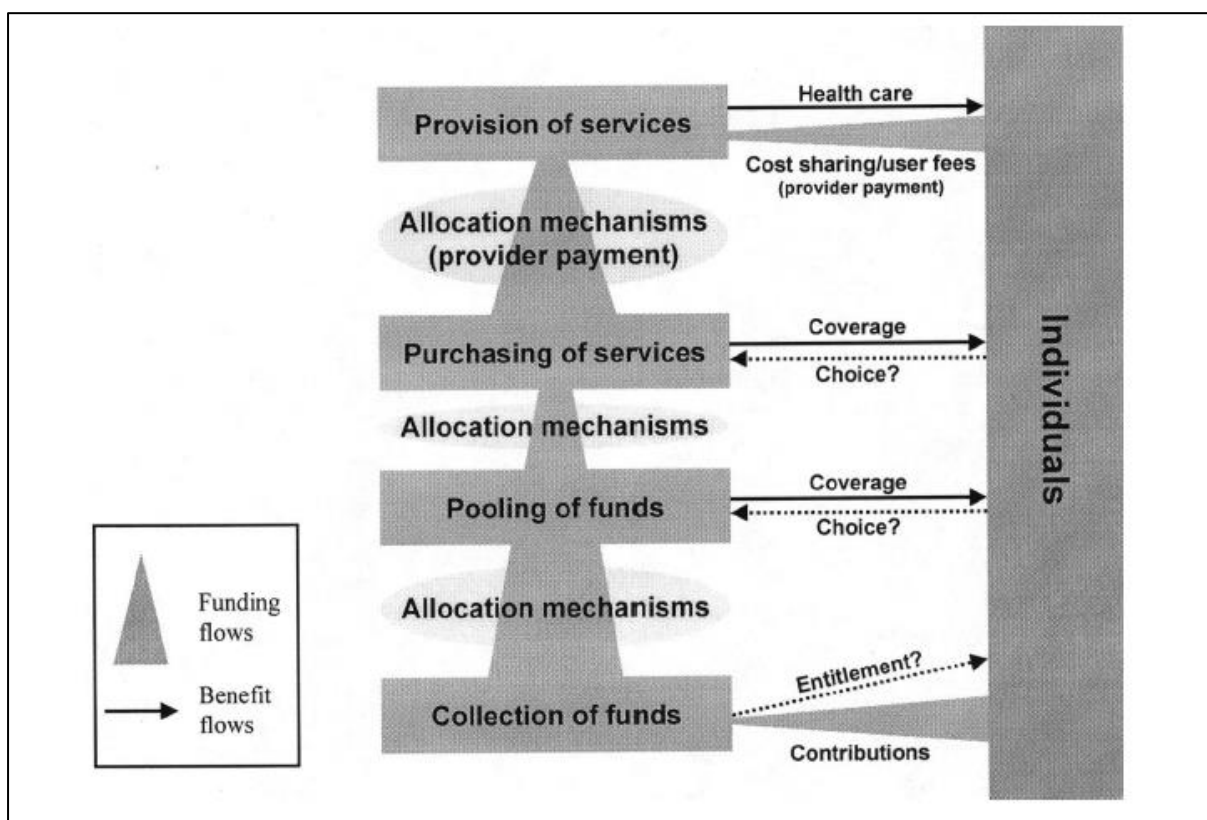


Figure 1: Health System Financing Functions and Population Links. (Kutzin, 2001)

Revenue Collection

Revenue collection relates to the sources of health care funding contributions, the way these contributions are structured and the collection agency responsible to collect the contributions. (McIntyre, 2007)

Sources of Funds

There are various avenues by which revenue is collected for the health system and these comprise of the following: (WHO, 2000)

1. Compulsory or mandatory prepayment:
 - a. Direct taxation on individuals and companies such as income tax or indirect tax on goods and services consumed such as general sales tax
 - b. Allocated revenues for the health system derived from certain revenues of government such as taxes on tobacco or alcohol
 - c. Social and national health insurance contributions
2. Voluntary prepayment to certain health insurance products
3. Out-of pocket payments
4. Donations
5. Foreign loans

The ratio of domestic funding i.e. the relative proportion of funding from individuals and companies is an important consideration that is dependent on many factors such as the size of the formal economy, the need to stimulate economic investment. In order to afford financial protection to certain segments of the population such as the poor, exemption policies that determine those whom are exempt from contributing must be formulated. (McIntyre, 2007)

The dependence on external funding is considered problematic as this source of funding is not sustainable and can be unpredictable. Therefore current research is focused on finding ways to increase the domestic resources for health. Resyst (2015) has provided evidence that South Africa, Kenya and Nigeria that have been able to increase their domestic tax revenue by expanding the tax base by focusing on the informal sector, in the case of the latter two countries. The study concludes by stating that increased revenue is attainable without the need to increase tax rate.

Contribution Mechanisms

This is the process by which the health system receives money from households, donor agencies or countries and companies. (WHO, 2000) Contributions are received in one of two ways i.e.

- pre-payment mechanism: The individual contributes through regular payments through tax payments, social health insurance or private health insurance
- Out-of-pocket payment: The individual pays a fee at the point of care

On average, out-of-pocket payments constitute almost 50% of financing in low-income countries, 30% in middle-income countries and 14% in high-income countries. (Mills, 2014).

There are mixed results regarding out-of-pocket mechanisms with some studies indicating positive effects such increasing revenue for a specific facility that enables procurement of drugs and payment of staff salaries (Nolan and Turbat, 1995) as well as reducing moral hazard i.e. preventing unnecessary use (Akin et al., 1997; de Ferranti, 1985). However, in low and middle-income countries, there is strong evidence that demonstrates that this form of payment predisposed the vulnerable, especially the poor, to financial hardship.

These individuals either do not seek care or resort to borrowing funds that puts the entire livelihood at risk. (McIntyre et al., 2005; Russell, 2004; Saksena, 2014). Therefore in these settings, user-fees are strongly discouraged as a form of contributory mechanism. (Gilson and McIntyre, 2005)

The most critical consequence of a health system where services are funded out-of-pocket is the restriction of access to certain health services and the exclusion of certain segments of the society such as the poor. In such a system, health services are procured on the “ability to pay” by the individual in need and as such there is no risk-sharing. Out-of-pocket payment is usually the most regressive way to finance health and exposes the individual to catastrophic risk. (McIntyre, 2007)

Equity is a key component of universal coverage and therefore it is important to understand which segments of the population, based on socio-economic status, bears the greatest burden in financing the health system. Equally important is the need to assess which

individuals experience financial hardship as a result of the impact of out-of-pocket payment. (Saksena, 2014). Thereafter, the appropriate reforms to the health financing policies can be implemented to improve the situation.

Equity of pre-payment funding mechanisms is determined on the degree of progressivity or regressivity of the contributions. A progressive contribution mechanism exists when high-income groups contribute a higher percentage of their income than do low-income groups. A regressive financing mechanism exists when low-income groups contribute a higher percentage of their income than high-income groups.

Some countries such as Denmark and Sweden have a proportional income tax structure whereby all citizens pay a set percentage of their income as tax. (Wagstaff et al., 1999) In low and middle-income countries, income tax is progressive with higher-income groups taxed at a higher rate. (Wagstaff et al., 1999) Generally, indirect taxes such as those levied on services and goods tend to be regressive, but progressive in low-income countries since the basic foodstuffs are either exempt from tax or are purchased informally, where the application of tax cannot be strictly applied. (McIntyre 2007)

The degree of equity within the entire tax revenue i.e. direct and indirect income will be dependent on the relatively proportions that each form of tax constitutes and the equity within each. (McIntyre 2007)

Voluntary private health insurance tends to be progressive especially when the contributions are determined based on income, as is the case for low-cost medical schemes plans in South Africa where the contributions are based on income-bands with those in the lower income bands contributing less but qualify for the same benefit package. Overall, these schemes cover a small section of the population, but this segment is typically comprised of beneficiaries of the highest income groups.

Contributions to mandatory health insurance in the low and middle-income countries tend to be regressive since contributions are usually based on a fixed percentage of earnings. (EQUITAP, 2005) This is based on the fact that earning is a small component of the overall income for the wealthy but a large component for the poor.

Types of Collecting Organisations

The organisation responsible for the collection of contributions is closely linked to the contributory mechanism e.g. income or payroll taxes are collected by governments or parastatals while voluntary private health insurance contributions are collected by private organisations.

McIntyre (2007) states that the type of collection agency can have an impact on the proportion of potential contributions actually collected. Accountability and trust in these organisations can affect the degree of compliance to contribution i.e. where there is evidence of maladministration in government, there is prone to be tax evasion. Alternatively, if private organisations are unable to demonstrate that the contributions are being used in the most appropriate manner to provide health services, then it is likely that existing members may opt out of the scheme and new members will not be encouraged not join.

The South African Revenue service is a good example of a collection agency that improved the efficiency and effectiveness of collecting tax contributions. (SARS, 2006; Resyst, 2015). The factors that led to this success is attributed to the employment of professional staff, investment in information technology to allow on-line tax submissions as well as engagement with the public through advertisement campaigns. However, as a result of the improvement in tax collection, the Minister of Finance was able to reduce the tax rates rather than allocate additional funds to health. Therefore it is essential to advocate government to increase the budget allocation to health as the tax revenue increases.

Pooling

Pooling refers to the accumulation and management of revenues that have been collected, in such a manner so as to distribute the risk of payment of health services across all members of the pool. The primary aim of this function is to distribute the financial risk to prevent individuals from self-funding and being exposed to the risk of impoverishment. "By increasing and stabilising demand and the flow of funds, pooling can increase the likelihood that patients will be able to afford services and that a higher volume of services will justify new provider investments." (WHO, 2000)

It is not possible to definitively predict when an individual will be ill and the subsequent care that will be required as well as the cost associated with the provision of this care. The costs

may be exorbitant and beyond the ability for the individual to pay for such care. (McIntyre, 2007)

There are two important features of pooling related to cross-subsidisation. (WHO, 2000) The first is related to health status whereby at a point in time, the healthy members of the pool are subsidising the sick members of the pool, since they contribute for a long period of time without requiring the use of health services. Sick members, on the hand, will contribute for a shorter period of time, but require relatively immediate access to care. Over time, those that are healthy will become sick and those that are sick will become healthy. This is known as risk cross-subsidy.

The other important pre-requisite for pooling relates to income cross subsidy. In this case, contributions are based on affordability and therefore, the rich will contribute more relative to their income while the poor will contribute less but the costs of illness are shared by those within the pool.

The type of financing mechanism determines the degree of pooling, with medical savings, which is a form of pre-payment, and out-of-pocket payments allowing for no pooling of risks. On the other hand, where the healthcare is mostly financed from tax sources or mandatory health insurance and the entire population is covered, such a system has maximum pooling and sharing of risk. (McIntyre, 2007)

The relationship between the financing mechanism and degree of pooling is clearly illustrated by Mills (2014), whereby pooling of health funding in low-income countries accounts for 38% of total health finance due to the fact that out-of-pocket funding is the predominate form of funding. This figure increases to 60% in middle-income countries and 80% in high-income countries as the proportion of pre-payment decreases.

McIntyre (2007) notes two key points with respect to risk pooling:

1. The size of the population and the socio-economic groups covered by the pool
2. The allocative mechanisms used to procure services from purchasing organisations.

Pool Size and Composition

Large pools are better than smaller pools since there is a larger amount of contributions that facilitates an increase in the availability of health services to beneficiaries of this pool. (WHO, 2000). A large pool can maximise the benefits of economies of scale for administrations as well as decrease the overall level of threshold that protects against uncertain or unexpected health services, thereby using the freed-up funds to purchase additional or more services.

The existence of a number of small pools results in inequity in terms of the distribution of income and risks amongst the various pools i.e. some pools will have members that are healthy and rich while others will have members who are sick and poor. The sustainability of small pools are compromised since the small size limits likelihood of that pool being able to predict its member's future health needs and being able to afford to cover unexpectedly high expenditure levels to provide a comprehensive set of benefits for its members.

Therefore, unless there are regulations to equalise clinical risks amongst pools and impose mandatory participation, there a real possibility that pools may focus their attention on ensuring that the healthiest and lowest risk members join, which is known as cherry-picking or cream-skimming. (McIntyre, 2007) Such behaviour leads to the exclusion of those individuals in need of health services from participation which is contrary to the very essence of universal coverage.

However, it is important to note that the benefits of larger pools in terms of pooling and purchasing, is only true up until a certain critical point i.e. post the critical point, the returns of economies of scale will diminish. Therefore, it is possible, to have multiple pools of a certain minimum size that allows for the distribution and equalization of risk. (WHO, 2000)

Allocation Mechanism

An important consideration of the pooled resources is the mechanisms by which these resources are allocated to meet the current and future health needs of the individuals within the pool. Mechanisms such as incremental budgeting (Pearson, 2002) have been used in the past however, risk-adjusted mechanisms are becoming more prevalent. This mechanism adjusts the allocation of resources to a specific geographic area based on the need for healthcare which is in turn determined by the: (McIntyre, 2007)

1. Population
2. Demographic composition
3. Levels of morbidity
4. Socioeconomic status
5. Cost of healthcare provision

“Risk-equalisation” is a process by which equitable resource allocation amongst many small pools can be achieved. Broadly, the risk profile of each pool is determined through the evaluation of various factors such as age, gender, levels of chronicity (Rice and Smith, 2002). Thereafter, a standard amount is derived that will provide financial cover and access to a package of healthcare services for an individual representative of the various risk profiles of all the pools. Each risk pool then receives an allocation of funding based on the number of the individuals per risk profile multiplied by the corresponding amount for that risk profile. In this way, risk-equalisation allows for the cross subsidisation of between individual risk pools.

Due to the financing structures in Columbia, Argentina and Netherlands, there are multiple pooling organisations. However, these countries have risk-equalisation mechanisms to enable cross-subsidisation amongst the various pools thereby ensuring sustainability of the pools. (WHO, 2001)

Purchasing

Kutzin (2001) defines purchasing as “the transfer of pooled resources to service providers on behalf of the population for which the funds were pooled”. The World Health Report (2000) states that, providers are mostly responsible for ensuring the effectiveness of health interventions. In order to ensure that providers fulfil this role, there must appropriate organisational arrangements and coherent incentives. Therefore, purchasing plays the critical role of ensuring that incentives are coherent through contracting, budgeting and payment mechanisms.

Furthermore, just as size plays an important role in pooling, it has similar effects on purchasing organisations where purchasing organisations responsible for large pools of

individuals can take advantage of economies of scale and use their size as a position of strength to negotiate improved price and quality of services from providers. (WHO, 2000)

Purchasers of health services are typically, government departments such as Ministry of Health, provincial or district health departments, social and private health insurance funds as well as community-based insurance and finally, individuals who self-fund care. (WHO, 2000)

The number of purchasers existing in a market will impact the purchasing arrangements. A single purchaser will have considerable monopsony power, which can be used to influence control prices and incentives. Multiple purchasers, on the other hand, may be more responsive to the groups they serve but this may be associated with increased administrative costs. (Rice, 2003)

The important considerations relating to the purchasing function pertain to: (McIntyre, 2007)

1. The package of benefits purchased
2. Provider payment mechanism
3. Form of purchasing i.e. strategic versus passive purchasing

Benefit Entitlement

The benefit entitlement relates to services that are available to the individuals, on behalf of whose resources are pooled. The most important consideration for the benefit package is its affordability and sustainability. The purchaser needs to balance the number of people eligible to access the service with the type and range of services covered. The universal coverage “cube” mentioned earlier is appropriate tool to use, to understand:

- The range of services to be covered
- Which segments of the population will have access to the benefit package,
- How much of the costs of this package is covered

Within the South Africa medical scheme industry i.e. private voluntary health insurance, legislation dictates that each beneficiary is entitled to a minimum benefit package (Medical Schemes Act, 1998) that focuses on hospital-based care and chronic conditions. However, beneficiaries can choose more comprehensive cover therefore within a single medical

scheme, there are multiple plans that offer different services to the separate groups of individuals that form part of that plan.

The benefit entitlements will have a direct and indirect impact on costs e.g. if the package only covers hospital-based services, then there will be a resultant increase in costs due to increase utilisation (direct costs). In addition, such a package will be inefficient, as care is sought for medical conditions in a hospital-based setting that could typically be addressed in a primary care setting (indirect costs).

Allocative efficiency is an important principle that must be applied when determining the benefit package. The application of such a principle will ensure that the allocation of resources is steered towards those services that address the heaviest burden of ill health and giving priority to cost-effective interventions. (McIntyre, 2007)

Provider-Payment Mechanisms

Provider payment mechanisms refer to the payment arrangements between purchasers and providers. The structure of payment arrangements has the potential to influence provider behaviour e.g. fee-for-service promotes that delivery of service but also creates incentives for over-production of services i.e., over-servicing. Capitation implies a fixed payment per beneficiary prospectively. This form of payment creates incentives for preventative care but can lead to underservicing. (WHO, 2000)

Each payment mechanism has disadvantages and advantages as illustrated in table 1 below:

Payment Method	Payment rate determined prospectively or retrospectively?	Payment to providers made prospectively or retrospectively?	Advantages	Disadvantages	Mitigations
1. Fee for Service	Prospectively	Retrospectively	Incentive for technical efficiency (where fixed fee schedules are fixed)	Incentives to increase the number of services including above the necessary level;	Apply global ceiling and/or adjust the fee to keep within the resource limit
2. Budget Allocation	Prospectively	Prospectively	Predictable expenditure and tight control Low administration costs	Limited direct incentives for efficiency unless linked to performance. Can lead to underservicing and cost shifting.	Link part payment to performance Monitoring and peer review.
3. Capitation	Prospectively	Prospectively	Improve efficiency of input mix Low administration costs	Under-provide services; refer to other providers; focus on less expensive health promotion and prevention; attempt to select healthier enrollees.	Align payment to risk Monitoring and peer review of providers practices Patient choice of provider
4. Salary	Prospectively	Retrospectively	Predictable expenditure Low administration costs	Possible underprovision and/or poor quality of care No incentive to see patients quickly,	Peer Review of provider practices Link part of payment to performance
5. Case-Based Payment	Prospectively	Retrospectively	Strong incentive for efficient processes	Unpredictable expenditure Relatively high administrative costs Incentive for cream-skimming	Adjust for case-mix by grouping people according to their use of resources.

Table 1: Provider - Payment Mechanisms (MACH, 2000; Kutzin 2001; McIntyre 2007)

No provider payment mechanism on its own can fulfill all four objectives. Therefore, purchasers must use a combination of payment mechanisms to achieve their objectives.

Strategic Purchasing

Providers are party to information that confers considerable influence over consumer demand for health care i.e. supplier-induced demand. This has been associated with considerable cost increases for health care. Certain mechanisms such as incentives, regulations and provider-payment methods can mitigate this behaviour. However, when purchasing goes beyond the simple reimbursement of services or products, such as linking the resource allocation decisions to provider performance i.e. service delivery, there is a strong incentive to pursue efficiency and quality. (Busse et al., 2007)

Thailand's quest for universal coverage illustrates the pivotal role of strategic purchasing within the health system to achieve the objective of universal coverage (Tangcharoensathien et al., 2014)

The authors reviewed the purchasing experiences of the National Health Security Office which manages the Universal Coverage Scheme and concluded that:

1. Strategic purchasing of health services improves access to care
2. Quality of services are assured through appropriate incentives
3. The benefit package offered free, contributes to financial protection.
4. Equity within the Scheme was enhanced.

Strategic purchasing is a way of ensuring that the healthcare interventions that are provided, improves the health systems responsiveness and financial fairness. This is achieved through a continuous search for "the best interventions to purchase, the best providers to purchase from, and the best payment mechanisms and contracting arrangements to pay for such interventions." (WHO, 2000; Figueras, Robinson et al., 2005).

The World Health Report (2000) provides clear guidance on each of these decisions:

1. *Which interventions should be purchased in response to the population needs and wishes, taking into account national health priorities and evidence on cost-effectiveness*

The determination of what interventions to purchase occurs at two levels:

1. Level 1: Related to stewardship and occurs at the societal level where purchasing is dependent on priorities of the health system i.e. health, responsiveness and fair contribution to financing.
2. Level 2: Occurs at a purchaser level where the purchaser is responsible the identification and purchasing of interventions that will achieve the goals of the health system (as defined in level 1). At this level, the purchaser has the authority to directly engage with providers and negotiate the services or interventions to be purchased.

2. *How should they be purchased, including contractual mechanism and payment systems*

There are two objectives regarding the purchasing of services:

1. Avoid purchasing on a small-scale as this will require intense and onerous management of providers and hence increase administrative costs.
2. Design and implement effective contractual, budgeting and payment mechanism that set the right incentives.

Contracting, budgeting and payment mechanisms create the environment for providers to strive towards improving the responsiveness of health system and access to services that are required by members of the pool while controlling cost of care.

3. *From whom they ought to be purchased in light of providers' relative levels of quality and efficiency*

In order to optimise the purchasing of services, purchasers need to be specific about the units of purchasing i.e. whether to buy individual interventions, a package of specific interventions or a complete set of services for pre-defined groups of individuals. Firstly, these units of purchasing allow the purchaser to purchase in accordance with the priorities of the health system i.e. preventative, curative or rehabilitative care, and secondly, facilitating the establishment of incentives, and the payment mechanism with the provider. (WHO 2000)

The size of the purchasing unit determines the diversity of providers thus ensuring an appropriate mix of services. In addition, a large purchasing unit creates the environment

for risk-sharing whereby risk is transferred to the provider that is encapsulated in a long term contracts. Small purchasing units do not lend themselves to such risk-sharing agreements, therefore in such small pools, the payment mechanism is reduced to fee-for-service. In such an environment, the focus of the interventions will be short-term isolated interventions.

The introduction of strategic purchasing changes the balance of power between the purchaser and provider. It will result in a range of provider behaviour responses, some positive and while others negative depending if strategic purchasing is perceived as an opportunity or threat.

Busse et al., (2007) state that these responses may manifest in either a structural or tactical manner. A structural response could be a merger or alliance with other providers to create a monopoly or oligopoly and thus control the market. A tactical response would be the resultant behaviour of the purchaser within the confines of a contractual agreement i.e. gaming the system or alternatively aligned to the objectives of contract.

There has to be capable stewardship by the purchaser of the health service i.e. government or appointed intermediaries, accompanied by sound leadership that establishes policies and guidelines that direct the purchasing decisions. The absence of stewardship will result in the failure of strategic purchasing.

The success of strategic purchasing in Thailand case-study is based on six key areas:

1. Definition of the benefit package
2. Management of provider through the contractual agreements
3. Managing provider payment mechanisms to control costs
4. Managing the potential consequences of the payment mechanism
5. Managing access and quality issues
6. Executing monopolistic purchasing power to buy quality medical products.

The Thailand case-study also illustrates the importance of transparency, accountability and information. In a 'single-purchaser' environment, strategic purchasers will have considerable influence and it is important to ensure that there is no abuse of power as this will lead to mistrust with providers. To this end, governance procedures must be established with regulatory frameworks that lead to clearly defined expectations of all parties.

Within the context of strategic purchasing, the purchaser must actively manage three relationships i.e. with Government, healthcare providers, and the citizens. (Resyst, 2014) As such, each of these relationships will be premised on specific purchasing actions e.g. in terms of providers, the purchaser must establish service-level agreements, in terms of governments, purchasers must work within the prevailing regulatory frameworks, and in terms of citizens, ensure access to services.

Certain forms of strategic purchasing strategies known under various guises such as “performance based financing”, “pay-for-performance”, “results-based financing” are being implemented in low- and middle-income countries. Eichler (2006) defines performance-based financing as “the transfer of money or material goods conditional on taking a measurable action or achieving a predetermined performance target.”

A study conducted in Haiti demonstrated an increase in health service delivery (Zeng et al., 2013) however experience from Burundi (Falisse et al., 2014) showed weak evidence leading to an increase in the utilisation of certain measures. Therefore there is general consensus that further empirical evidence is required to understand the benefits and drawbacks of this payment model. (Lui, 2008; Oxman, 2009; Fretheim, 2012).

Contracting

Overview

Many of the mechanisms of strategic purchasing are dependent on a pre-agreed arrangement between the purchaser and provider. Such an agreement can take the form of a contract defined as “purchasing mechanism used to acquire a specified service, of a defined quantity and quality, at an agreed-on price, from a specific provider for a specific period “. (Taylor, 2003)

This implies that by pre-defining the expectations of the contracting parties, contracts could be used as a management and regulatory tool that improves the efficiency, quality, equity and cost-effectiveness of the delivery of health services.

During the late 1980's, contracts gained prominence as a mechanism to improve the management of the public sector management. (Palmer, 2000). However, adoption of this mechanism within the health sector only started to take place in mid-1990's (Mills and Broomberg (1998), McPake and Hongoro (1995)).

By May 2003, the World Health Organisation, at its tenth World Health Assembly plenary meeting, acknowledged the role of contracting arrangements in the improvement of health systems and subsequently, urged member states to: (WHA 56.25.2003)

- (1) to ensure that contractual arrangements in the field of health adopt rules and principles that are in harmony with national health policy;*
- (2) to frame contractual policies that maximize impact on the performance of health systems and harmonise the practices of all parties in a transparent way, to avoid adverse effects;*
- (3) to share their experiences on contractual arrangements involving the public and private sectors and nongovernmental organisations in the provision of health services;*

Experiences regarding the use of contracting indicate that contracts are applied in one of two contexts, to implement a specific initiative with narrow and well-defined boundaries such exemplified in the case study evaluated by McPake and Hongoro (1995). In this case study, the contract between a private hospital and the State clearly defines the nature of the services and the eligibility of the patients who qualify for the service to be provided by the private hospital in return for a fee.

The other context in which contracts have been applied, are as policy instruments to impact the performance of health systems. The Ministry of Health in Burundi developed a national policy for contracting health facilities, with the aim of using contractual arrangements as a tool to complement existing health system tools. (Falisse et.al., 2014).

Each approach has a different frame of reference, with the former being associated with a singular need and the latter being part of a broader framework. "From being an ad-hoc, even covert tool, contracting thus becomes a tool whose use is advocated and whose potential and limits as a means of improving the performance of health systems are recognized." (Perott, 2004)

Rationale for Contracting

The goal of all contractual relations is to optimize the performance of the health system. Individual interests are superseded by a collective general interest, underlying the importance of contracting as the tool to formalize these interests.

Within a contractual arrangement, the purchaser of the service is known as the “contractor” while the provider of the service is referred to as the “contractee.”³ (England, 2000) This relationship is typified by the “principal-agent” economic theory. Due to the pre-existing information asymmetries between both parties, the contract is used by the principal as a mechanism so that the agent’s best interests lead to desirable outcomes for the principal.

Contracting has the potential to creating incentives to improve the distribution, utilisation and cost-effectiveness of health services. Ashton et al., (2004) notes that some of the benefits of contracting include increased focus on quantity, quality and costs of services. In addition, there is promotion of technical efficiency in terms of health service delivery on the part of the provider and improvement in allocative efficiency in terms of setting of priorities on the part of the purchasers. Loevinsohn et al., (2009) demonstrated that the cost per visit for contracted primary health services in Punjab, Pakistan, were 33% less when compared to similar services but on a non-contracted basis.

Loevinsohn and Harding (2005) provide additional attractive features of contracting for health services including ensuring an increase in managerial autonomy and decentralized-decision making, promoting competition amongst providers to improve efficiency and cost-effectiveness.

Contracts allow governments to formally purchase services from the private sector, thereby enabling the private sector to potential to meet the public sector shortfalls in terms of service delivery. Contracting out health services to private sector to focus exclusively on the vulnerable segments of the population has been demonstrated to improve access, efficiency and equity with the health system. (Alonge et al., 2014; Levin and Kaddar, 2011). This is

³ Within the context of this section of the literature review, all references to contracts, purchasers, contractors, providers, contractee and services, relate specifically to health and must be interpreted as such.

further demonstrated by evidence from South Africa, (Kula and Fryatt, 2014) illustrating the innovative roles that the private sector can play regarding service delivery thereby supporting State's health sector reforms.

The decision to contract is not straightforward but rather complex, and needs to respond to the particular needs at a particular time. However, contracting as noted by Siddiqi (2004) is not the solution for all problems of the health care system and not everything can and should be contracted out.

Opponents of contracting assert that the process of contracting, incurs considerable transaction costs. The theory suggests that there may be substantial transaction costs involved in creating, monitoring and maintaining the contracts. The extent of the costs is dependent on the technical capacity of the contracting parties to draft, conclude as well implement and monitor a contract (Mills & Broomberg, 1998).

Furthermore, opponents state that the contract may create conflict between the efficient use of resources and the equitable provision of health care services and has the potential to undermine equity gains unless the issue of equity is specific in the contract.

Equity may be compromised due to the provider behaviour or purchaser selection of low risk patients where the payment does not adequately compensate for the level of risk assumed by the agent. (Le Grand 1991, Bartlett and Le Grand 1993) Therefore the provider may not be inclined to under-serve those in need, in order to ensure that the contract is profitable.

Zaidi et al., (2012) clearly illustrated the manifestation of these concerns by evaluating a contract between a non-governmental agency (NGO) and the government. In this case-study, both the purchaser i.e. government and provider i.e. NGO, lacked the political and technical capacity to effectively conclude and implement the contract. The NGO did not have sufficient capacity to meet the requirements of the purchaser i.e. government. In attempt to increase output, less focus was placed on qualitative aspects and hence provided sub-standard care resulting in sub-optimal implementation of the contract.

Mills and Broomberg (1998) provide the following reasons as to why contracting may have a considerable negative impact on the health system for the following reasons:

1. Selective contracting is contrary to the concept of coordinated care as it may lead to fragmentation of care within the health system
2. Selective contracting, while promoting competition amongst public and private actors, may lead to increased costs of resources such as personnel especially where supply of these resources are limited
3. Selective contracting can ring-fence resources when those resources can be better utilised elsewhere in the health system hence increase inequities in health service delivery

The upside of contracting is the possible improvement health system performance but at the same time, there is a downside risk of lowered health system performance.

Considerations of Contracting

Contracting is considered to be a category of strategic purchasing. (Kutzin, 2001). Therefore it is appropriate, that the questions associated with strategic purchasing, discussed above, be adapted to contracting to ensure the appropriate due diligence is applied by those intending to utilise this mechanism and optimise its outcomes:

1. *What interventions should be contracted?*
2. *How should these interventions be contracted?*
3. *From whom, should these interventions be contracted?*

It should be noted that responses to these questions, should only be considered, once contracting has been determined to be the appropriate strategic purchasing mechanism.

What interventions should be contracted?

Once the appropriate services have been defined as per the needs of the population, the next consideration for purchasers, is to determine if the interventions offered by providers *could* (italicized for emphasis) be contracted.

This determination is referred to as “contractability” and has three dimensions: (SHOPS Project, 2012)

1. **Measurability:** The ease at which the quantity and quality of services being considered for contracting can be specified.
2. **Monitorability:** The accuracy at which the quantity and quality of services being considered for contracting can be observed.
3. **Contestability:** The likelihood of new entrants into the market based on the barriers to entry into the market.

Bloom (2000) introduced the concept of “risk-benefit continuum” which categorises the type of service along a band in terms of its measurability e.g. the contracting of non-clinical services is easier to specify than core clinical services such as inpatient and outpatient care.

Monitorability is influenced by the diversity of services being considered for contracting, with fewer services increasing the monitorability. This is due to the fact that monitoring and evaluation systems must cater for the diverse range of services.

Contestability is affected by the uniqueness of the service provided and the probability of it being replicated or enhanced by an alternate provider. This is a key concept in determining the level of power between the purchaser and provider.

Ultimately, services with a higher level of contractability are more desirable to contract and achieve the intended results.

How should these interventions be contracted?

Parker and Hartley (1997), state there are two approaches that could be undertaken to achieve the overall objective of health system improvement:

1. Competition
2. Partnership

Competition is the traditional approach whereby the purchaser attempts to obtain the lowest possible price for the best service by eliciting bids from two or more potential suppliers known as competitive bidding.

In the partnership approach, the relationship between the purchaser and provider is based trust and confidence usually because of a prior relationship. Generally, this relationship is limited to specific providers.

Relationships based on competition are generally more expensive due to frequent tendering, complex contracts with contingencies and lack of trust between the parties as evidence in the Pakistani case study (Zaidi, 2012). On the other hand, relationships based on partnership avoid the unnecessary costs of frequent tendering by establishing long-term contracts with a few dedicated suppliers.

The type of approach will determine the style of the contract i.e. classical or relational. The primary difference between the two styles is the degree of enforceability of the contractual terms i.e. non-adherence to a contractual obligation by one of the contracting parties will be grounds for litigation. A classical contract is detailed and legally binding and is the preferred form of contractual agreement where there is explicit stipulation of the expectation of each party to the contract and is thus associated with a high degree of enforceability.

A relational contract on the other hand, does not have the same degree enforceability or completeness. Rather, relational contract depend on the cooperation and trust between the parties. The details of relational contracts focus less on measurements but more on the spirit and goodwill between the contracting parties. Majority of the contracts regarding health services have been relational in nature due to the need for cooperative relations between the purchaser and provider. (Palmer, 2000).

However, there has been a trend to introduce performance-based contracting whereby part of the remuneration is related to the achievement of pre-determined performance targets. Experiences from Cambodia, (Soeters and Griffiths, 2004), Nicaragua (Jack, 2003) and Bangladesh, (Loevinsohn, 2002) were based on performance-based contracting. The benefit of this type of contracting is that it contains elements of classical contract i.e. defines

performance measures creating accountability defines but is based on the trust and cooperation as encapsulated by the relational contract. However, the challenges associated with performance-based contracts are defining the measures of performance, which broadly fall within two main categories, quantity measures and quality indicators. The results from these studies are mixed. i.e. there is improvement in quantitative measures but qualitative measures have not demonstrated any noticeable changes.

From whom, should these interventions be contracted?

Services must be procured from providers who have a track record of service delivery and experience. Ideally, the purchaser will establish a series of quality requirements and the onus in the potential purchaser to demonstrate the ability and means to meet these requirements. (Ashton, 2004; Busse et al., 2007)

In Guatemala, (Macq, 2008), the Ministry of Health expected that prior to and during the contractual term, all providers, partake in standardised process that included authorisation to bid, annual compulsory certification and voluntary accreditation. The results from this process will determine the continuation of the contract.

Abramson (2004) recommends that once the purchaser has performed a needs assessment and determined that it will contract for services, the next step is to decide whether to undertake the competitive bidding process or sole source contracting. This decision is dependent on the market structure i.e. one or many providers. In a market with many providers, the competitive bidding process would be preferred as it assures that services as provided at the lowest price that the market can sustain however, in a market where only one provider can meet the needs of the contract, the contract may be negotiated with this single sole source provider.

Ideally, purchaser should establish clear selection criteria, communicate these to potential bidders and request a “request for proposal (RFP)” document from interested bidders. This RFP is evaluated by a committee that has the technical to do so. A short-list of potential bidders is generated based on the predetermined selection criteria. These short-listed bidders are then subjected to a round of questions and clarifications before a provider is selected. (SHOPS, 2012)

Key Contractual Elements

A contract formalises the relationship between the purchaser and a provider. The success of a contracting arrangement is dependent upon the alignment of the interests of the contracting parties, how coherent the objectives are as well as the implementation and on-going monitoring of the contractual arrangement. Listed below are certain key elements of the contract that if clearly defined, will enhance the success of the contract to meet the objectives of the contracting parties:

Obligations of the Contractee

Walsh (1995) proposed two ways in which the contractual obligations of the contractee can be stipulated:

1. Performance Contract: The contract contains the intended outcome defined by the principal and the agent is then left to determine how best to achieve the outcomes
2. Method-Based Contract: The contract stipulates the methods to be used or workload to be achieved.

Most contracts usually contain elements of both forms of contracts. The method-based contracting involves less risk and therefore a risk premium may be added to the performance-based contract to cater for the work that may be required. The principal may incur a higher price yet encounter difficulties to assuring quality.

Reimbursement

The payment mechanism is an extremely crucial component of the contractual agreement as it is key in creating incentives which influences agent behaviour. (Barnum, Kutzin and Saxenian, 1995). There are a variety of payment mechanisms, as discussed above, that could be employed dependent on the service to be contracted and the degree of uncertainty of the workload.

Contracts can be differentiated into two categories i.e. hard and soft contracts depending on when the price of the service is negotiated. In a hard contract, the price is finalised before implementation of the contract. This type of contract is subject to litigation if the terms of the contract are not met. In a soft contract on the other hand, the price is finalised at the

end of the contract period when the terms that are mutually advantageous can be agreed. (Mills and Broomberg, 1998) These are similar to relational contracts.

Term of the Contract

The duration of contracts can vary from one year to an open-ended contract that is automatically renewed annually. The challenge of a short term contract i.e. one or two years is that there may be a need for retendering and hence additional costs. Agents are reluctant to invest in resources if there is a risk of losing the contract in the near future. Proponents of longer term contracts state that these facilitate collaboration and sharing of information as well as reduce excessive transaction costs (Robinson and Le Grand, 1995). In addition, trust can develop in long-term relationships which can then reduce the need for extensive monitoring of the contract.

Longer contracts need to make provision for periodic changes to the costs of services that have been contracted. This is to ensure that the prices cater for any changes in the cost of resources and inflation.

Performance Targets

There are several ways to engender accountability within contractual agreements such as the inclusion of performance targets and sanctions or penalties if these performance targets are not met. Busse et al., (2007) recommends that targets within contracts should be realistic but challenging otherwise known as a “stretch-target”, transparent, selective, evidence-based and reflective of health needs and priorities.

In terms of quality, Velasco-Garrido et al., (2005) state that there are three main quality requirements for contractual arrangements:

1. Standards of Care: These are appropriate when the evidence is incontrovertible
2. Quality Assurance initiatives
3. Quality targets for processes and outcomes

Walsh (1995) provides two approaches to dealing with non-performance of contractual obligations based on the degree of alignment and trust between the contracting parties. If there is lack of trust and each party is seeking to unfairly profit at the expense of the other, then the contract will contain sanctions to deter such behaviour. However, if there is

alignment of objectives and goals between both parties, then any performance issues will be dealt with amicably, in a collaborative manner. These approaches are also dependent on the complexity of services being contracted, with simpler services being contracted, with punitive measures in place.

Success Factors of Contracting

An investigation into the contractual arrangements in four Latin American countries (Macq et al., 2008) concluded that the contracting is not a linear and straightforward process, but rather evolutionary due to the specific contextual factors and the resulting interplay between all stakeholders. Therefore, the authors conclude that due to the unpredictable nature of contracts as they evolve, there is a need for the contracting parties to have a set of values and adopt a flexible and reactive approach to ensure the success of the contract.

In choosing whether to contract, the purchaser must take cognisance of the prevailing legal, political and social context as well as the capacity to manage the contracting process which includes negotiating, establishing the goals and objectives of the contract, preparation and implementation of the terms of the contract and the subsequent evaluation and monitoring thereof. (Palmer, 2000)

Contractual arrangements based on competition amongst service providers are associated with high transaction costs and opportunistic behaviour (Perrot, 2004). As a mechanism to reduce these transactions, there is a greater reliance on cooperative or relational agreements, where there is a genuine desire between the parties to work together on the basis of trust and honesty. In addition, transaction costs may be reduced by working with a group of providers rather than one individual group. (Ashton, 2004)

The end-to-end management of the contractual process requires that parties have specific technical skills. The lack of these skills or access to these skills will comprise the outcomes of the contractual agreements. Many contracting parties while acknowledging the lack of technical skills fail to take measures to address these shortcomings and thereby abandon the idea of contracting.

A key tenant of the contractual agreement is the inclusion of the objectives to be met. Thereafter, performance indicators must be stipulated so as to allow the parties to assess if

the objectives have been met. In fact, the absence of methods of evaluation within in a contract essentially makes the contract a memorandum of understanding or declaration of intent. (Slack and Savedoff, 2004). Subsequently, a quality assurance system and auditing process must be implemented and agreed to by both contracting parties. Performance measures upon which remuneration is based, can be misrepresented or costs are cut at the expense of quality. Therefore a quality assurance system will validate the results.

Evaluation is a key aspect of contracting because of the need of on-going monitored and reviews to ensure that the aim and objectives of the contractual arrangement has been met. However, according to Perrot (2004), in practice, few contracts are evaluated to ascertain if their objectives have been met and thus 'remain outside the sphere of the contract whereas it should be an integral part of it.'

The success of contracting is enhanced if there is complementarity of a specific contract within a framework of strategic purchasing, whereby there is congruence amongst the incentives thus positively impacting the entire health system e.g. incentives are aligned to the performance measures and to other contracts. (Busse et.al 2007)

Lessons of Contracting

In a multi-country review of contractual arrangements in the Eastern Mediterranean Region, Siddiqi et al., (2004) conclude that contracting as purchasing tool, when applied carefully, can positively impact the health systems performance. The review proposes five key elements of effective contracting:

1. Clearly defined deliverables
2. Supportive stakeholders
3. Trust between purchaser and provider
4. Independent source of monitoring information
5. Legal and political environment conducive for contract implementation

Ultimately the success of a contracting arrangement is dependent upon the alignment of the interests of the contracting parties, how coherent the objectives as well as the implementation and on-going monitoring of the contractual arrangement

Experiences in Contracting

Since the advent of contracting for health services, the main reasons provided for the implementation of contractual agreements relate to improved access for health services or a reduction in costs of providing these services, especially in low and middle-income countries as evidenced by reviews and case-studies performed in these settings.

This is plausible given that these settings often do not have sufficient resources for the efficient provision of services to the greater population, a fact that is compounded by the effect of demographic and epidemiological changes in these settings. The most recent review regarding contracting undertaken by Herberholtz and Supakankunti (2015), in South East and East Asia still notes access to care as the primary reasons for contracting.

The earliest review on contracting conducted by Mills and Broomberg (1998), concluded that for case studies evaluated in South African and Zimbabwe, hospital-services and non-clinical care could be provided at a lower cost at the same level of quality provided pre-contract.

In a review of ten case studies undertaken by Loevinsohn and Harding (2005), six of the cases demonstrated improved quality of care and coverage of services e.g. in India, a non-governmental organisation was contracted to provide Tuberculosis control services to a defined population. The results compared the impact of this contractual arrangement to a publically managed facility of similar size. The treatment completion rate for the NGO-provided service was 14% higher than that of the publically managed facility.

In a later review conducted by Liu et al., (2007), 13 contracting interventions were evaluated. Majority of these interventions were predicated on the need to improve access to health services and if achieved for the underserved and poor segments of the populations, there would be improved equity. A few case studies were focused on the improvement of quality of care e.g. in Romania, the private sector was contacted to provide primary health care. The quality outcome was measured by determining the level of patient satisfaction regarding the service received. (Vladescu and Radulescu, 2002)

Largarde and Palmer (2009) conducted a Cochrane review to assess the effectiveness of contracting to improve access and health outcomes. The results indicate that contracting can

improve access and utilisation however, the authors cautioned against the generalisability of these findings.

There have been a number of case-studies on contracting in Africa. Table 2 below provides a synopsis of some of two such case studies:

Country	Intention of the Contractual Arrangements	Outcomes	Key Lessons	Reference
Burundi	Ministry of Health or non-governmental agency contracts with health facility for the provision of services.	Increase utilisation of maternal and child health-care services	The performance-based remuneration model improved the supply of services.	Falisse et al, 2014
Rwanda	Provincial health facilities contracted to receive part of their funding based on performance targets.	<ol style="list-style-type: none"> 1. Reduced “out-of-pocket” payments 2. Reduced cost per outpatient consultation 3. Increased family planning coverage 4. Increase insecticide bed net coverage 	<ol style="list-style-type: none"> 1. Increased efficiency and quality of health services. 2. As part of the contract, the contractee, should be given such autonomy to make decisions. 	WHO, 2008

Table 2: Selected African Country Experiences regarding contracting

As part of the review of contractual arrangements in the Eastern Mediterranean Region, Siddiqi et al. (2006) found that in Egypt, the Family Health Fund (administered under the auspices of the Ministry of Health) contracted with private providers for a defined package of services. However, only those private providers accredited by the Ministry of Health are eligible to participate in these contracts. Hence the accreditation illustrates a form of due diligence on the part of the Ministry.

Experiences from Tunisia (Siddiqi et al. 2006) illustrate the importance of conditions relating to the participation in contracts. Private institutions have to agree to set of conditions that focus on remuneration, quality assurance of facilities and pre-approval procedures for certain surgical interventions.

In Morocco, (Siddiqi et al. 2006), the Ministry of Health entered into contractual arrangements with the private sector as a mechanism to decentralise hospital and district services in an attempt to improve access to these services. In addition, other contractual arrangements were concluded with non-governmental organisations for the provision of family planning services and diagnostic and treatment services. Therefore, it is possible to have a range of different contractual agreements with different parties, as long the objectives of each contract support the overarching health policy of the country.

Identification of Gaps

Despite the increasing level of interest and experiences in the literature on the value of contracting in health systems, there is a paucity of information regarding on the following areas:

1. Impact of Contracting across levels of care

Majority of the experiences relate to the contracting of a specific level of care i.e. primary care, secondary care or tertiary care. There is a lack of evidence regarding contracting across the three levels of the health delivery settings which is important to understand the broader system-wide impacts. Quality measures in these 'level of care' specific-contracts, do not include as a performance measure, utilisation targets for the other levels of care e.g. quality measures of contracts for primary health care services focus on utilisation statistics to assess access and equity. It is possible that these providers may unnecessarily refer to secondary levels of care, in an attempt to improve performance measures. Therefore, by

evaluating the impact of the contract across all three levels of care, a more reflective picture of the health system performance is achieved.

2. Contracting for Secondary and Tertiary care services

Experiences from various countries, tend focus on contracting of health services related to primary care, public health services such as immunization, and nutritional services. There are limited studies undertaken at secondary care and tertiary care levels. It is plausible that this may be done intentionally based on the immediate requirements and priorities of those health systems. However, given that contracting for health services could be applied at any level of care, it is important to compare and contrast the challenges regarding contracting in the different health delivery settings.

3. Contracting for Clinical and Specialised Services

Bloom (2000) states that clinical services are the most difficult form of services to contract since healthcare providers fear a loss of control of their core competency. This is an area that requires further investigation and analysis as clinical services are scarce in low- and middle-income countries, contracting can prove to be a mechanism of optimising these scarce resources and create 'more health for money'.

4. Holistic Evaluation of Health System Performance

The evaluation of many contracting models focuses on one or two aspects of health system performance i.e. access, efficiency, quality and equity. Evidence generally demonstrates improvement in service delivery but aspects such as quality and equity remains questionable. In order for the true impact of contracting to be evaluated as well as facilitate cross-country comparisons, it is critical that all four dimensions of health performance be evaluated.

Therefore a need exists for future research regarding contracting, to focus on filling these current gaps identified in the literature.

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Part C: Journal manuscript

Value of Contracting as a Strategic Purchasing Mechanism in a Private Health System: A South African Case Study

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Key Messages

- Contracting for health services can reduce costs while simultaneously improving quality, access and equity of care.
- Contracting can result in system-wide improvements across multiple healthcare delivery settings.
- Innovative contracting and on-going cooperation between the contracting parties will result in benefits for all stakeholders.

Abstract

Contracting has been promoted as a mechanism for improving efficiencies in health systems. Studies on contracting have focused on the investigating the complexity of contracting between purchasers and providers, diversity of experiences, stakeholders and contextual settings. Despite an increasing interest and experimentation of contracting as a way to improve health systems, the results of contracting remain controversial.

Over the past 13 years, the South African voluntary health insurance (medical scheme) industry has experienced cost escalations that exceed inflation. There is a need for medical schemes to become more strategic in their purchasing decisions by reviewing the services they buy, from which service providers and how these services will be purchased.

This study aims to assess the effect of a contractual agreement between a healthcare financing agency, medical scheme, and a managed care organisation in the private health sector in South Africa for the provision of a conservative back rehabilitation programme.

Evidence was drawn from a case study involving a contractual agreement between Sasolmed Medical Scheme and Documentation – Based Care Risk Management, a managed care organisation with a network of healthcare providers, by specifically examining the rationale, key features and outcomes of the contract agreement in accordance with a previously documented contracting framework.

The study was conducted through document review and data analysis comparing the 'pre-intervention' to 'post-intervention' period. The findings relate to the mid-point of the six year contractual term.

The interim results of the contract indicate that access to conservative back care improved, which is congruent with most experiences of contracting. However, there were improvements in efficiency and quality of care, resulting in reduction of total costs of back care.

The study provides evidence that innovative contracting as indicated by the unique terms of the contract as well as the interim outcomes, serves to demonstrate that contracting as a mechanism of strategic purchasing can achieve 'more health for money' by optimising the use of resources and creating alignment between purchasers and providers of health care.

1. Introduction

Over the past two decades, many countries have adopted contracting as a mechanism to set incentives for providers to improve responsiveness to health care issues by employing more efficient use of resources to improve health outcomes, while retaining the overall control over strategic objectives and financial protection.

The value of contracting has been promoted by the World Health Organisation, in their World Health Report in 2000 and further reiterated at the fifty-sixth world health assembly where resolution WHO 56.25 was adopted (WHO 2003). The resolution urged member states to ensure that the contractual arrangements were informed by national policies and subsequently maximised the impact of health system performance through the involvement and coordination of all stakeholders.

Contracting, is defined as “a purchasing mechanism used to acquire a specified service of a defined quantity and quality at an agreed-on price from a specific provider for a specific period “. (Taylor 2003)

Contracting has the potential to creating incentives to improve the distribution, utilisation and cost-effectiveness of health services. Ashton et al. (2004) notes that some of the benefits that contracting brings to health system improvement include, enhanced service delivery and accountability by providers as there is a link between payment mechanism and output. In turn, providers place an increased focus on quantity, quality and costs of services thereby optimising technical and allocative efficiencies.

On the other hand, opponents of contracting assert that the process of contracting, incurs considerable transaction cost. (Taylor 2003) The process of contracting entails: designing

the contract, engaging with potential providers, establishing performance measures and payment mechanism, implementing the contract and thereafter, monitoring and evaluating the performance.

Furthermore, opponents state that the contract may create conflict between the efficient use of resources and the equitable provision of health care services and has the potential to undermine equity gains unless the issue of equity is specific in the contract. (Mills and Broomberg 1998)

Despite an increasing interest and experimentation with contracting as a way to improve health systems, the results of contracting remain controversial. Some multi-country experiences have demonstrated that services could be provided at a lower cost for the same or higher level of quality, yet on the other hand, other evidence indicated that there was no difference in the level of service between contracted and non-contracted service providers.

Furthermore, while contracting may have improved access to health care services, the evidence on other aspects of performance such as equity, quality and efficiency was unknown. (Mills and Broomberg 1998, England 2004, Loevinsohn and Harding 2005, Liu et al. 2007, Largarde and Palmer 2009.)

In a multi-country review of contractual arrangements in the Eastern Mediterranean Region, Siddiqi et al., (2004) conclude that contracting as purchasing tool, when applied carefully, can positively impact the health systems performance. The review proposes five key elements of effective contracting:

1. Clearly defined deliverables
2. Supportive stakeholders

3. Trust between purchaser and provider
4. Independent source of monitoring information
5. Legal and political environment conducive for contract implementation

Ultimately the success of a contracting arrangement is dependent upon the alignment of the interests of the contracting parties, how coherent the objectives as well as the implementation and on-going monitoring of the contractual arrangement

Within South Africa's private healthcare market, medical schemes represent the largest source of private healthcare funding. (Still 2014) Since 1998, the medical schemes industry has undergone a series of reforms that when coupled with the higher-than-inflationary increases for medical care and health expenses has challenged the long-term sustainability of medical schemes in South Africa. As a result, the average medical scheme contribution exceeded the general inflation by 2.3% per year over the past 13 years. (Bhana et al. 2014)

Given the rate of increase of medical inflation within the South African private healthcare market, there is an absolute need for medical schemes to become more strategic in their purchasing decisions by reviewing the service they buy, from which service providers and how these services will be purchased. (WHO 2000) This is of paramount importance to ensure that medical scheme members are more likely to receive appropriate medical care at affordable costs, while ensuring the long-term sustainability of medical schemes.

This study aims to assess the effect of a contractual agreement between a healthcare financing agency, medical scheme, and a managed care organisation in the private health sector in South Africa, by specifically examining the rationale, key features and outcomes of the contract agreement between Sasolmed Medical Scheme (Sasolmed), and Documentation – Based Care Risk Management (DBC RM), a managed care organisation

with a network of healthcare providers. The study also attempts to formulate key learnings that will inform future policies regarding contracting.

The rest of the paper is organised as follows. Section 2 discusses the fundamentals of the South African private healthcare market, within the context of medical schemes. The next section, 3, focuses on the core elements contract such as rationale and key features. Section 4 describes the methodology and data used to evaluate the contractual arrangement. A discussion of the empirical results is provided in Section 5. Section 6 provides a discussion of the results within the context of the contractual features and in reference to the literature. Finally, section 7 concludes and gives direction for future research.

2. South African Medical Scheme Industry

South Africa has a dual healthcare system comprising of both, publically and privately funded and provided healthcare systems. The National Treasury estimated that for the 2013/14 fiscal year, South Africa would spend 7.9% (R286 billion) on healthcare, with 49.2% (R140 billion) spent on public sector while 48.8% (R139 billion) on the private sector. (Still 2014).

Medical Schemes comprise the largest share of private funding, accounting for approximately 81.5% of private funding. (Still 2014) The Council for Medical Scheme's annual report 2013/14 states that medical scheme industry received R129 billion in contributions in 2013 for 8.7 million people (16% of the population). Therefore, medical schemes represent the primary financing mechanisms of private healthcare in South Africa.

The history of medical scheme dates back to 1889 when the first South African medical scheme was established for employees of De Beers Consolidated Mines. Since then, the medical scheme industry has undergone numerous reforms. (Still 2014). At the end of 2013, there were 89 medical schemes in the industry. (Council for Medical Schemes 2014)

Medical schemes are “not-for-profit entities” and are owned by the individuals who contribute monthly premiums, and managed by a Board of Trustees. In terms of the prevailing legislation, Medical Schemes Act (1998), the “business of a medical scheme”, means the business of undertaking liability in return for a premium or contribution –

- a) to make provision for the obtaining of any relevant health service;*
- b) to grant assistance in defraying expenditure incurred in connection with the rendering of any relevant health service; and*
- c) where applicable, to render a relevant health service, either by the medical scheme itself, or service, either by the medical scheme itself, or by any supplier or group of suppliers of a relevant health service or by any person, in association with or in terms of an agreement with a medical scheme.”*

Membership to medical schemes is voluntary and all members pay a monthly premium on a pre-payment basis. The pooled contributions then provide these members with an entitlement to certain health services as dictated by the benefit package. Legislation dictates that all members be entitled to a minimum package of health care services benefits however, members can choose more comprehensive cover at additional costs. (Medical Schemes Act 1998) The basic benefit package covers the costs associated with hospitalisation while more comprehensive packages include ambulatory benefits such as doctor visits, medication and pathology.

Most commonly, purchasing of services is done by individuals as their personal needs of healthcare services demand however certain medical schemes limit the choice of providers. The medical scheme then reimburses the treating provider for the service. It is possible for the medical scheme to outsource the collection, pooling and purchasing to one or more third-party organisations.

The Medical Schemes Act (1998) governs the contracting of healthcare providers by medical schemes. Regulation 15E (2) in terms of the Act stipulates the following requirements that need to be adhered to when contracting with healthcare providers.

“A managed health care organisation or a medical scheme, as the case may be, may place limits on the number or categories of health care providers with whom it may contract to provide relevant health services, provided that—

(a) there is no unfair discrimination against providers on the basis of one or more arbitrary grounds, including race, religion, gender, marital status, age, ethnic or social origin or sexual orientation; and

(b) selection of participating health care providers is based upon a clearly defined and reasonable policy which furthers the objectives of affordability, cost-effectiveness, quality of care and member access to health services.”

3. Core elements of the Contractual Relation

The contractual agreement relates to two parties, Sasolmed, a purchaser of health care services and DBC RM, a managed care organisation with a network of providers i.e. DBC clinics. Figure 1 below illustrates the contractual arrangement.

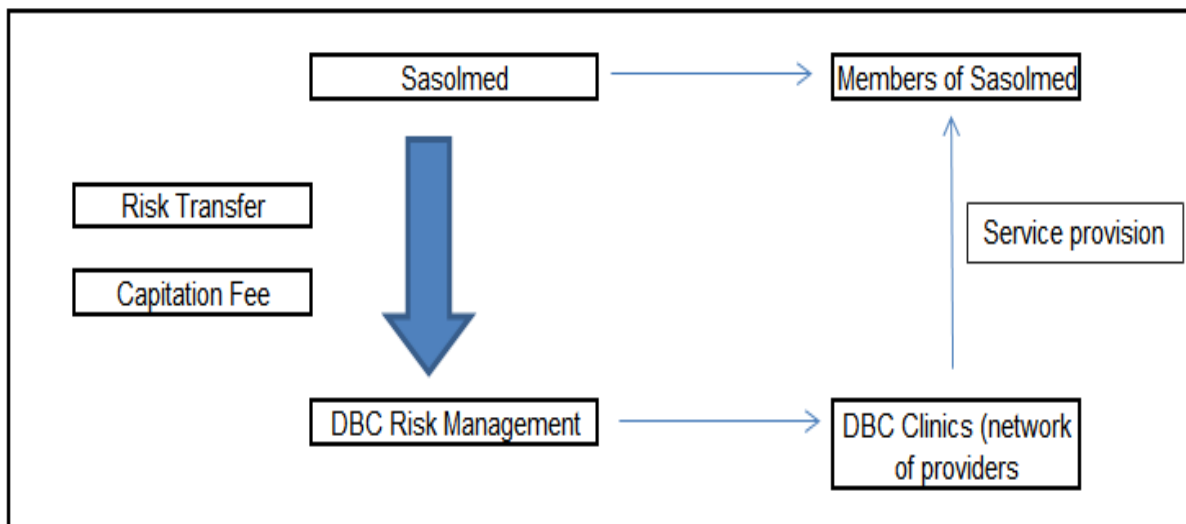


Figure 1: Contractual Arrangement between Sasolmed and DBC Risk Management

Sasolmed has contracted with DBC RM to provide a back rehabilitation programme for all members of Sasolmed, at the network DBC clinics. In return for healthcare services, Sasolmed will pay DBC RM, a capitation fee.

3.1 The Rationale for Contracting

Sasolmed was concerned with the rate of increase in expenditure on hospital costs for back surgery, which increased by an average of 11% per year between 2006 and 2009. Back related hospital admissions for 2009 amounted to R32 million, representing almost 4% of total claims. The admission rate for the 4 year period was 6.41 admissions per 1000 lives. Given that 30% of patients require repeat surgery, 4 years following the initial surgery, the increase in future admission rate and cost of hospitalisation was expected to continue. There was an urgent need to consider alternatives to attenuate the escalation in costs of back and neck surgery.

DBC RM approached Sasolmed offering a unique conservative out-of-hospital back rehabilitation programme for Sasolmed's members at any one of its DBC Clinics in South

Africa. The treatment pathways, processes and equipment were imported from Finland, where it has been successfully applied in managing chronic back pain conservatively, thereby reducing the admission rate for back surgery. The programme focuses on the concept of active muscle reconditioning, supported by scientific clinical studies that show that exercise reduces pain and can normalise function in many instances. (Taimela 2004; Heistaro et.al. 2007).

The programme typically consists of a 6 week intensive rehabilitation program that is delivered by a multi-disciplinary team at a DBC Clinic, consisting of a general practitioner, physiotherapist and biokineticist. There are currently eight clinics in South Africa, situated in the major metropolitan areas. All centres adopt the same systematic approach, quality control, centralised training, common tools and continuous communication to ensure that the evidence-based guidelines are applied uniformly in every clinic

DBC RM was confident enough in their methodology that they were willing to enter into a risk sharing contractual arrangement with Sasolmed. Ultimately, Sasolmed identified as one of its priorities, the need for cost-effective treatment of chronic back ailments. The solution provided by DBC RM, was selected and the contractual arrangement represented the appropriate mechanism for Sasolmed to strategically purchase this service.

3.2 Key Features of the Contract

The purpose of the contract, was to transfer the risk associated with increasing costs of back surgery from Sasolmed (contractor) to DBC RM (contractee), whereby DBC RM will be responsible for the all costs related to back surgery i.e. in-hospital and out-of-hospital costs (ambulatory). The key features of the contract are reflected in table 1 below:

Key Features	
Contract Design	Classical contract with explicit terms and obligations of each party. Includes minimum service levels and dispute resolution process
Payment Mechanism	Capitation
Duration of Contract	6 year term commencing in August 2010
Review and adjustment	Annual inflationary adjustment of capitation fee. Capitation fee is subject to a reduction factor of 5% from year 2 onwards.

Table 1: Key Features of the Contract between Sasolmed and DBC RM

The transfer of funds from Sasolmed to DBC RM followed a unique arrangement whereby Sasolmed initially funded all in-hospital back-related claims as well as the out-of-hospital rehabilitation costs. At the end of every quarter, a profit / loss calculation would be performed. If a profit was generated, this would be paid to DBC RM, while a loss would be recouped by the Sasolmed from DBC RM. This calculation is reflected in the formula below:

$$\text{Profit / Loss for Quarter} = \text{Notional Capitation fees} - (\text{In-hospital claims} + \text{Out-of-hospital rehabilitation claims})$$

Equation 1: Profit/Loss formula to determine flow of funds

The contract contained a clause that had a direct impact on members forgoing the conservative programme in favour of surgery. In order to disincentivise members from proceeding, with surgeries when the conservative back and neck programme was a viable alternative, co-payment of R5000 was payable by these members for the surgery.

4. Methodology and Data

4.1 Framework

The prevailing objective for evaluating contracting arrangements is to gauge its impact on the performance of the health system. The framework proposed by Liu et al. (2004), comprises of four dimensions of health system performance i.e. access, quality, equity and efficiency.

Previous evaluations of contracting-out projects most often only considered one dimension of success in terms of access on health services. There is little evidence of contracting-out on quality and efficiency. (Liu et al. 2004) Evaluation of contracting-out initiatives must consider all these dimensions of health system performance to ensure that one dimension has not improved at the expense of another.

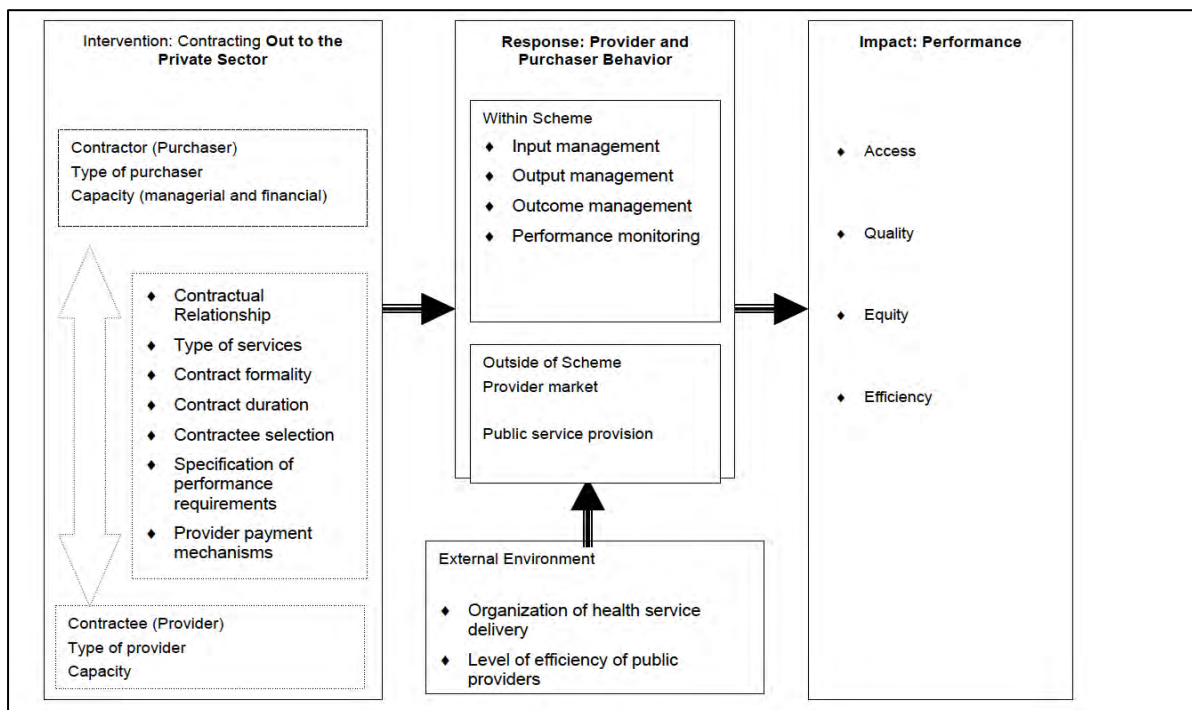


Figure 2: A framework for evaluating contracting-out of health services (Liu et al. 2004)

The focus of this study evaluates the impact of the contract on the reduction of costs associated with back surgery. There are three main stakeholders affected by the contractual arrangement i.e. Sasolmed, DBC RM and Sasolmed members. As such, each stakeholder has their unique requirements regarding the contractual arrangements. Sasolmed requires that the total costs of back care i.e. in-hospital and out-of-hospital care is reduced as a result of the contractual arrangement. DBC RM requires that majority of members are successfully treated out-of-hospital, at a DBC clinic thereby preventing the need for expensive surgeries. This will ensure that the contract is financially beneficial for DBC RM. Finally, Sasolmed members require access to safe and effective treatment for their chronic back ailments.

Therefore, Table 2 below contains the specific performance indicators, as recommended by Lui (2004) and the justification for their selection based on the unique requirements of each of these stakeholders, regarding the contract.

Performance Dimension	Description	Performance Indicator	Justification
Access	Refers to the absence or presence of barriers (economic and physical) that influence the provision, utilisation and coverage of the healthcare service.	1. Percentage of population residing within 30 kilometres (km) of nearest DBC clinic.	<p>1. For the purposes of the study, physical access was selected, since all members had medical benefits that covered the costs associated with treatment.</p> <p>2. This minimum threshold distance of 30km was selected as this distance is considered to be reasonable access by the Council of Medical Schemes that governs the medical schemes in South Africa. (This distance is greater than the 5km distance proposed by the WHO.)</p>

Equity	Refers to the fairness in the distribution of health care services in accordance with level of need, access and financing of individuals.	<ol style="list-style-type: none"> 1. Percentage of the population insured to access the service 2. Existence of a triage process at the clinical to prioritize patients based on severity of health. 	<ol style="list-style-type: none"> 1. Equity is related to access (physical and financial), which is addressed above. Therefore, given that a segment of the membership may not have physical access to a DBC clinic, equity is being measured in terms of the implications of the lack of access for members. 2. The treatment protocols applied at the DBC clinic, are not appropriate for all levels of clinical severity of chronic back ailments i.e. there are instances when surgery is the appropriate form of care. Hence, equity to the appropriate form of care based on the level of need is being assessed.
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<p>Quality</p>	<p>Refers to the changes in the health status of the patient as a result of the health intervention.</p> <p>(Donebedian, 1966)</p>	<p>1. Improvements in patient-specific clinical indicators:</p> <p>a) Pain intensity: Determined by visual analogue scale.</p> <p>b) Range of motion (ROM) – the maximum amount of movement, measured in degrees, around a specific joint in the body.</p> <p><u>Sagittal ROM</u>: combined value of flexion and extension movement in the sagittal movement plane.</p> <p><u>Rotation ROM</u>: combined value of rotation towards the left and towards the right.</p> <p><u>Lateral Bending ROM</u>: The combined value of bending sideways towards the left and</p>	<p>1. Data from the clinical reports of the treating healthcare provider are used to assess the clinical outcomes of the patient.</p> <p>2. A limitation of this performance dimension relates to the fact that a “patient satisfaction” questionnaire pertaining to the various factors regarding the care provided at the clinic, is lacking. This is necessary to assess if there are the differences between the perceptions of those receiving the care and the clinical results.</p>
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		towards the right.	
Efficiency	Refers to the relationships between the inputs and outputs	<ol style="list-style-type: none"> 1. Reduction in the costs of hospital admissions 2. Reduction in the total costs (in- and out of hospital) back and neck ailments 	<ol style="list-style-type: none"> 1. The treatment protocols are aimed at reducing the need for surgery by ensuring that chronic back ailments are treated successfully at a DBC clinic. 2. The basis of the contract relates to the reduction in overall costs associated with chronic back care. There should not be a situation where costs are shifted from hospital-based care to out-of-hospital based care, without a result nett reduction in overall costs.

Table 2: Specific Performance Indicators for evaluation of the Contract

4.2 Evaluation Design

The period under review is 1 August 2010 until 31 July 2013, which represents the mid-point of the contract period. While the sources of data are derived from clinical records, operational reports and medical claims information, all results relating to costs are based on the period 1 August of a year to 31 July of the subsequent year. Furthermore, costs relating to the pre-intervention period are compared to the intervention period. The evaluation design is illustrated in Table 3.

06/07	07/08	08/09	09/10	1 August 2010	10/11	11/12	12/13
Pre-intervention (pre-contract) period				Contract Implemented	Intervention/review period of study		

Table 3: Evaluation Design of Study

The starting point of the pre-intervention period i.e. 2006/07 has been selected as the initial capitation fees were based on the average of in-hospital back-related claims costs over the 4 year period from 2006 to 2009.

Risk-adjustment is a method of compensating for differences of factors that would have arisen between various time periods. This is essential to ensure that the accurate measurement and comparison between the time periods. Within this study, factors such as medical inflation, age, gender, and ethnicity have been identified to have major impacts on the year-year cost changes. Therefore all costs have been risk-adjusted to 2013 terms for these factors.

Administrative data such as demographic and medical claims information, and clinical information such diagnoses, treatment and outcomes were retrieved from the

datawarehousing systems of Sasomed's administrator Medscheme and DBC RM for the period 1 August 2006 to 31 December 2013. Data regarding the contractual arrangement will be gathered through document review and archival records.

1. The signed contractual agreement between Sasolmed and DBC RM, that forms the mainstay upon which the various aims of this case study have been based.
2. Supplementary reports such as annual clinical outcomes reports as ad-hoc progress reports were also be evaluated.

4.3 Ethics

This study protocol was approved by the University of Cape Town's Faculty of Health Sciences Human Research Ethics Committee and guided by the ethical guidelines set out in both the Declaration of Helsinki (World Medical Association [WMA] 2012) and the Belmont Report (US Department of Health, Education, and Welfare [DHEW] 1978).

Informed consent to access and analyse the contract, reports and claims data from the database of Sasolmed relating to Sasolmed members, was obtained from the Principal Officer of Sasolmed and the Chief Executive Officer of DBC RM.

Finally the analysis of the contract included evaluation of claims relating to healthcare services, hence there was a potential to relate claims to specific individuals however, this risk was mitigated as the data extracts will be de-identified. All data extracts was cataloged in a database that was be password-protected.

5. Results

This section presents the findings from the analysis relating to the impact of the Sasolmed-DBC RM contractual arrangements. The results are reported as per the performance indicators i.e. access, equity, quality and efficiency defined in section 4.

5.1 Access:

The operations of Sasol are predominately based in the South African localities of Sasolburg and Secunda. As such, 70% of the geographic distribution of Sasolmed members is reside within and around these areas, with the balance scattered throughout the country.

Table 4 below provides an indication of the distribution of members to the existing DBC clinics prior to implementation of the contract i.e. 30 July 2010, on implementation of the contract i.e. 1 August 2010, and at the end of the review period i.e. 30 July 2013.

Date	Within			
	10km	20km	30km	100km
July 2010	4.4%	10.4%	12.3%	58.9%
August 2010	44.2%	76.7%	83.5%	92.4%
July 2013	40%	72.7%	81.5%	91.8%

Table 4: Proportion of members within a distance from the nearest DBC Clinic (Data Source: Medscheme and DBC RM datawarehouse)

It is clear that access to the DBC service for a large majority of patients was problematic, with only 12.3% of the membership residing within 30km of a DBC centre. Additionally, due to the nature of the rehabilitation programme i.e. two sessions per week over six week

period, lack of access would have compromised compliance and subsequently completion of the programme.

Therefore, in order to overcome the barrier to access for a large majority of the membership base, a key contractual obligation was placed on DBC RM whereby a new clinic was to be established in Sasolburg, and in Secunda prior to implementation of the contract.

The results indicate that the establishment of the two clinics in Sasolburg and Secunda has improved access for majority of the Sasolmed membership, with an additional 70% of the population living within 30km of a DBC clinic. Access has been maintained throughout the three-year period with 81.5% of the population being within a 30 km radius of a DBC centre.

5.2 Efficiency

The overriding rationale for the contractual arrangement was to reduce the costs of surgery associated with Back and Neck surgery by promoting conservative treatment.

There are three dimensions to consider when analysing the impact of the contract on hospitalization costs of back and neck surgeries.

1. A reduction in Admission Rate per 1000 lives
2. A reduction in the cost per life on hospital costs
3. A reduction in total cost for back care i.e. in-hospital and out-of-hospital care

The information presented below, in respect of these three dimensions is reflected in “12 month periods” commencing in August 2006 and ending on July 2013.

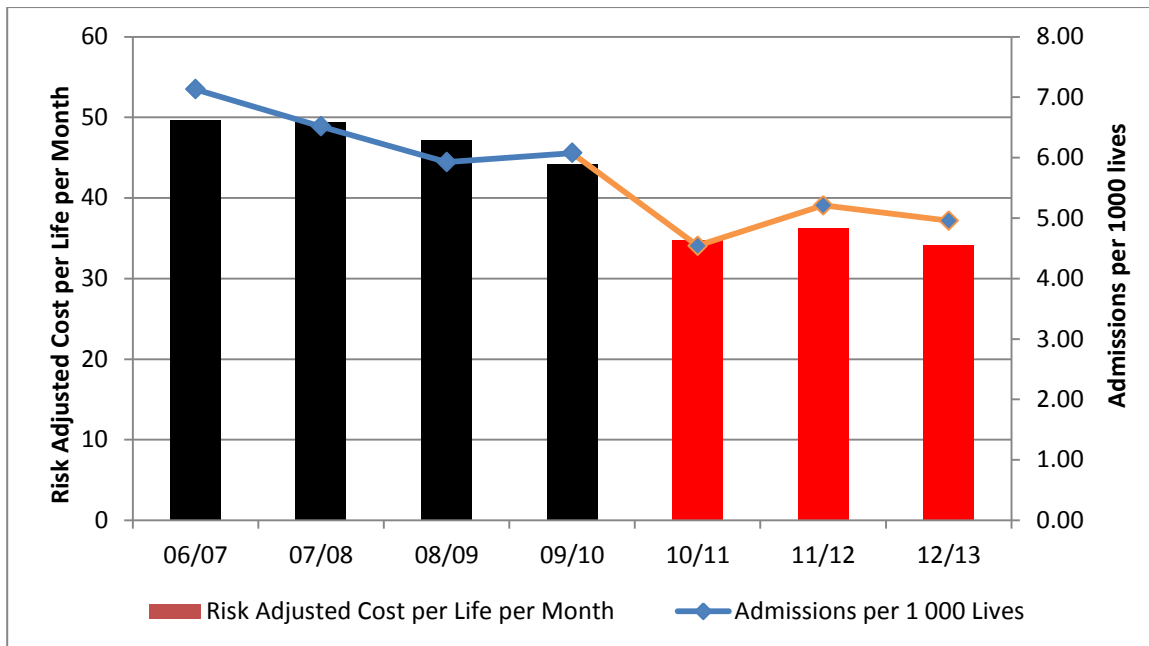


Figure 3: Impact of Admission Rate for back surgery on Hospital costs of Back Care (colours represent pre and post evaluation periods) (Data Source: Medscheme Datawarehouse)

The admission rate between 2006/07 and 2009/10 has exhibited a downward trend therefore it is likely that this trend would have continued in the absence of the program. However, there was a 9% reduction per year between 2006/07 and 2008/09, followed by a 3% increase between 2008/09 and 2009/10. Upon implementation of the program, there was a 25% decrease between 2009/10 and 2010/11. This was followed by an increase of 15% in the followed year and a 5% decrease in the final year of the study period.

Given that the admission rate during the post-contract period did not exceed the lowest admission rate experienced during the pre-contract period, it is reasonable to accept that the introduction of the programme is one of the reasons for the decrease in the admission rate. However, further quantitative analysis will be required to identify the actual efficiency gain due to the introduction of the programme, which is beyond the scope of this paper.

The average admission rate during the contract period was 4.91 admissions per 1000 lives compared to the pre-contract period of 6.37 admissions per 1000 lives i.e. 23% reduction. The reduction in the admission rate has, in turn led to a constant reduction in the hospital cost per life has reduced.

The total cost associated with back and neck ailments, is the sum of the hospital-based treatment and the ambulatory-based treatment. Therefore it is critical that any reduction in hospital costs should not be associated with a commensurate increase in ambulatory treatment, as this will undermine the long-term financial sustainability of the contract.

Thus the efficiency of the financial arrangements of the contract can be determined by evaluated the profit or loss incurred by DBC RM.

During the period under review, there have been fourteen quarterly profit calculations, of which eight was profit-generating while six was loss-making. However, over the entire period, DBC RM has realised a profit from the contractual arrangement. This indicates that the reduction in costs of back and neck hospitalisation, has not been associated with a commensurate increase in the ambulatory costs and hence the total overall costs of back and neck care has reduced.

5.3 Quality

Conservative treatment of Back and Neck ailments is intended to reduce the need for surgical intervention. The outcome measures used to assess the quality of the conservative treatment were the degree of change in patient-specific clinical markers, pre- and post the programme

The data presented below, relates to the average assessment results at the time of the initial assessment and then again, upon completion of the programme, for the entire 3 year review period.

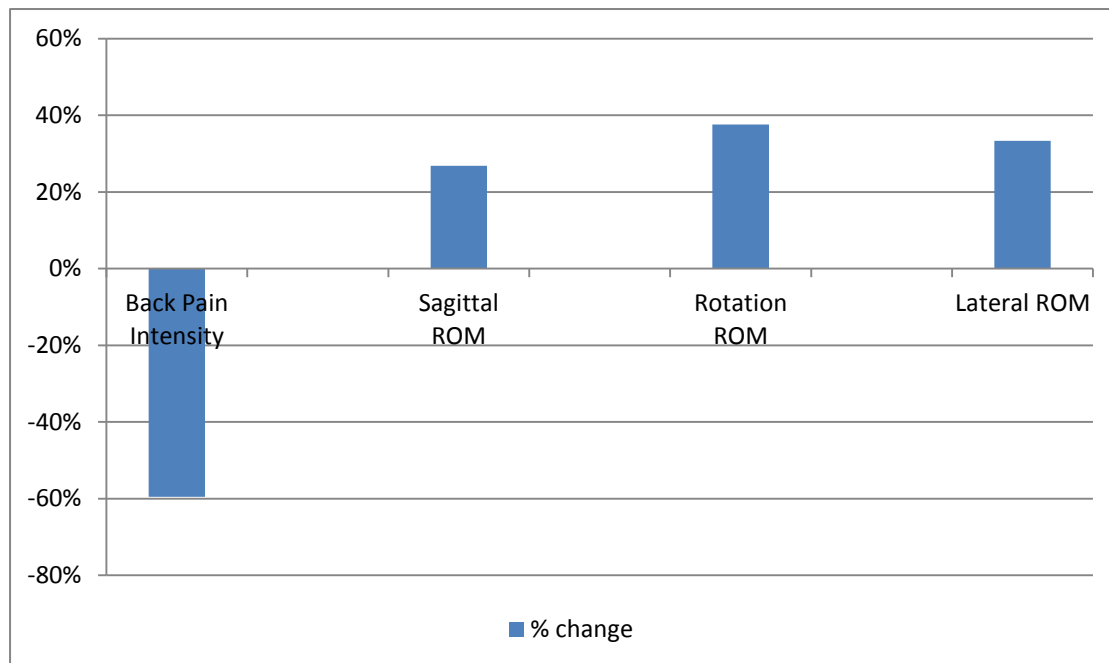


Figure 3: Change in patient-specific performance indicators between starting and completing the programme. (Data Source: DBC RM Datawarehouse)

The positive change in the clinical markers and self-reported pain measurement as a result of completing the programme, provides a clear indication of the improved health status of these individuals.

These results are congruent with the trends associated with these patient-specific clinical markers from previous studies regarding conservative treatment for chronic back ailments using the DBC protocols. (Taimela and Harkappa, 1996; Kankaanpaa et al., 1999; Anuar and Sim, 2003; Taimela et al., 2004; Tederko et al., 2004). In the most recent study undertaken by Engelbrecht et al. (2008), in South Africa, the authors found improvements in all clinical markers. However, the patients are not directly comparable due to differences in age and baseline levels of the various studies.

5.4 Equity

The contract arrangement covered all members of Sasolmed i.e. 100% of the membership was entitled to receive rehabilitative service for back conditions.

In order to ensure that those members requiring surgery were not unduly subjected to participate in the programme, care guidelines determining the criteria for referral to the programme as well as “red flag” clinical markers indicating the imminent for surgery were implemented to ensure that surgery.

Additionally, while the R5000 co-payment for back surgery was imposed to disincentivise surgical intervention when the alternative conservative treatment was clinically appropriate, the co-payment was not applied in the following circumstances:

1. For the segment of members residing further than 30km of the nearest DBC clinic hence ensuring that the co-payment is limited to those residing in 30km proximity of a DBC centre.
2. For all members requiring surgery when the conservative treatment was unsuitable hence ensuring equity to access of appropriate care.

6. Discussion

Contracting of health services has been previously shown to improve certain dimensions of health system performance i.e. access, efficiency, quality and equity however, there is a paucity of evidence, on its effect on all four dimensions. (Palmer 2000, England 2004, Liu 2004, Largarde and Palmer, 2009)

This study examined the impact of a contractual arrangement in terms of all four dimensions of health system performance, at the mid-point of the contractual term. The results thus far

indicate that admission rate and subsequently the cost per life for back surgeries have reduced since the implementation of the contract. However since this reduction is not associated with a commensurate increase in ambulatory care, the total costs of back care i.e. in-hospital and out-of-hospital, has decreased illustrating the efficiency of the contract in terms of cost containment.

In terms of equity of access, majority of the membership (81.5%) live in close proximity of a DBC clinic. For the minority members who are unable to access the service, these members still have access to previous forms of therapy such as back surgery. In addition, these members are not impacted by the application of the co-payment for directly accessing hospital-based treatment.

The improvement in patient-specific clinical markers demonstrates the quality aspects of the conservative programme. Since results taken upon completion of programme exceed the reference values, it is possible to conclude that the programme had significantly improved the quality of life for these members. In turn, such an improvement prevents the need for surgery, which has been demonstrated by the decreased admission rate, noted above.

The results of the contract are congruent with the experiences of contracting from around the world regarding access. (Liu et al. 2007) This study goes further to demonstrate improved efficiency and quality of care, which other studies do not adequately evaluate.

There are certain features encapsulated within the contract, which has positively contributed to interim outcomes discussed above. The contract period is six years, which serves the interests of both contracting parties as a shorter contracting period will create perverse incentives. Such incentives will include providing palliative treatment which delays or defers surgical intervention to when the contracting period is over and Sasolmed will then be liable

for these costs. In addition, a shorter period will not allow DBC RM to recoup the capital outlay provided for the established for new clinics.

The drawback of capitation as a form of payment mechanism is that it promotes underservicing. However, this drawback has been overcome, risk transfer relates to the total cost of back and neck care i.e. hospital and ambulatory care. Hence if there is underservicing in the ambulatory setting, the result will be an increase in hospital admissions and an associated increase in total costs since hospitalisation is much more expensive.

To promote improved cost-efficiencies year-on-year, the annual capitation fee is subject to a reduction factor. Therefore, DBC RM is incentivised to improve the efficiencies of the programme to ensure that the contract remains financially viable. Such efficiencies include working with general practitioners to improve referrals, finalising other forms of identification of suitable members and tracking compliance to ensure compliance.

Generally capitation fees are determined prospectively and paid prospectively. (McIntyre 2007). However, the flow of funds regarding this contract only took place at the each quarterly (3 monthly) periods, when the profit/loss calculations were done. This improves the transparency of the flow of funds between Sasolmed and DBC RM. Additionally, efficiency regarding administration of the contract is enhanced and transaction costs reduced since the as existing payment processes to providers continued i.e. Sasolmed continued to fund all claims (in-hospital and ambulatory) and recouped these claims from the capitation fee. Therefore DBC RM was not required to establish unnecessary claims and payment processes with provider groups.

In order to safeguard the Sasolmed's interests, DBC RM has to put a bank guarantee of R7.5 million. This guarantee mitigates the risk that DBC RM will not default on their obligations.

An important component is the technical capacity of the purchaser and provider to continuously monitor and evaluate the contract post implementation. Both parties have technical experts such as clinicians, statisticians, and actuaries supported by a data warehouse. This facilitates robust debate based on facts rather than opinions. There are monthly operational meetings between Sasolmed's administrator, Medscheme and DBC RM to discuss operational issues, concerns and risk and well as improvement initiatives. Various reports e.g. annual outcomes, monthly operational reports and quarterly profit calculations are compiled by the individual parties.

An analysis of the key trends of the South African medical scheme industry (Bhana et al. 2013) over a 13-year period i.e. 2000 to 2012 indicates that inflation associated with medical care and health expenses averaged 8.2% per year while general inflation averaged 5.9% per year. Therefore year-on-year difference of 2.3% poses a significant threat to the long-term future of the medical scheme industry. Within the context of this cost escalation in medical scheme industry of South Africa, this study offers key insights to 'bend the cost curve' and ensure sustainability of medical schemes.

Innovative contracting as indicated by the unique terms of the contract as well as the interim outcomes, serves to demonstrate that contracting as a mechanism of active purchasing can achieve 'more health for money' by optimising the use of resources and creating alignment between purchasers and providers of health care.

Furthermore, this case study demonstrates that while costs are can be contained, it does not need to be at the expense of access, quality and equity. In fact, these performance indicators can improve.

This case study also illustrates the system-wide impacts i.e. across levels of care that a contractual arrangement can achieve. Therefore, by evaluating the impact of the contract

across at two levels of care i.e. secondary and tertiary, a more comprehensive picture of the health system performance is achieved.

Finally, contrary to Bloom (2000) who states that clinical services are the most difficult form of services to contract, this case study demonstrates that it is possible to contract specialised and multi-disciplinary services.

The obvious limitation of this study is that the results presented are interim i.e. at mid-point of the contract period. Therefore the results to date should be viewed as tentative but serves to indicate that thus far, the contract is of benefit to all three stakeholders.

The second limitation is that transactions costs were not included in the study. However, the oversight, performance assessment and payment of funds were delegated to Sasolmed's administrator, Medscheme, responsible for the administration services. Therefore the management of the contract formed part of existing service provided to Sasolmed.

The third limitation was that the focus of the study was related to the impact of the contractual arrangement rather than the pre-contractual planning as well as the process of implementation. These elements should be evaluated to understand the challenges as well as success factors for pre-implementation and implementation phases of the contract.

The final limitation is that the results of the study are not directly comparable to other case studies on the impact of contracting of healthcare care services. The main reason is that studies apply various interpretations of performance indicators, thus limiting the opportunity to compare results. Furthermore, there is a paucity of case studies that focus on similar contractual arrangements contained with this case study, especially in terms of payment arrangements and services hence cross-studies comparisons are limited.

7. Policy Recommendations

The results of the research have a number of policy implications for the healthcare sector in South Africa.

1. South Africa, like many other countries, should heed the advice of the WHO, regarding the use of strategic purchasing to improve the access and provision of basic health services especially in the rural and outlying areas. In this regard, it is recommended that the Ministry of Health (MoH) formulate a national policy regarding the contracting of health care services.
2. Many case studies illustrate the need for capacity building at the individual and organisational level to ensure that the outcomes of contracting are optimised. Therefore, it is recommended that the MoH develop such capacity with all spheres of the department.
3. Finally, one component of the envisaged National Health Insurance for South Africa is based on contracting of medical doctors. Given the results of this study, it is important that the contracting include all performance indicators and not be limited to a price for healthcare services.

There most important policy implication for the medical scheme industry of South Africa relates to the urgent review of the prevailing contracting legislation reflected in the Medical Schemes Act and Competition Act:

- Healthcare services are procured on quality, access, efficiency, and equity and not simply price.
- Allowances are made for the selective contracting of providers to encourage competition and efficiency (which is currently outlawed)

This will ensure that the medical schemes remain sustainable and that medical inflation is reduced.

8. Conclusion

The 2010 World Health Report states that “there needs to be a more strategic approach when purchasing health care services.” Furthermore, the report notes two sources of inefficiencies relate to inappropriate hospital admissions, and an inefficient mix of health interventions.

The experience of the Sasolmed-DBC RM contract notes a reduction in the admission rate of back surgery, which is associated with conservative treatment in an ambulatory yet multi-disciplinary setting. Furthermore, the strategic approach to purchasing services for back care has resulted in a reduction of total costs i.e. in-hospital and out-of-hospital costs.

It is hoped that, despite the limitations, the insights provided by this study, demonstrates the principles in which contracting of healthcare services could be applied to meet the directive of the WHO. The study provides empirical evidence that it is possible to positively influence all dimensions of health system performance i.e. access, equity, quality and efficiency.

Future research should be directed at evaluating the impact of this contractual arrangement at the conclusion of the term as well as focus on the process pre-contractual planning as well as the process of implementation.

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Part D: Policy Brief



*School of Public Health &
Family Medicine*

University of Cape Town

Source:

This policy brief is based on a journal article titled “Value of Contracting as a Strategic Purchasing Mechanism in a Private Health System: A South African Case Study”

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Contracting health services for Outcomes and Value in South African Medical Schemes Industry

Key Points

- Contracting is a tool that when applied appropriately, can improve health outcomes i.e. access, quality, equity and efficiency
- Contracting aligns the incentives between the purchaser and provider utilizes resources more efficiently.
- Contracting is an evolutionary process and is dependent on the capacity of the contracting parties as well as the prevailing legislative and context-specific factors.
- Contracting can be used by governments to formalise public-private partnerships to enhance the provision of essential healthcare services especially to the vulnerable and poor segments of the population.

Introduction

In South African, medical schemes represent the primary financing mechanisms of private healthcare in South Africa, covering 16% of the population (8 million lives). In 2013, these health insurance vehicles received R129 billion in total contributions.

Medical schemes are “not-for-profit entities” and are owned by the individuals who contribute monthly premiums, to defray the costs associated with

⁴ 2012/13 Annual Report,
Council for Medical Schemes,
2014.

services obtained from healthcare providers.

Over the 13 year period from 2000 to 2012, general inflation averaged 5.9% per year, however “medical inflation” (see box 1 for description) averaged 8.2%⁵.

Box 1: What is Medical Inflation?

- Relates to costs increases associated with medical care and health expenses
- Also takes into account the utilization of health related services
- Influenced by burden of disease and aging.

The long-term trend of increasing medical inflation has prompted concerns regarding the long-term

⁵ Bhana, R., Towert, A., Cronje, K. & de Vries, C. 2014, *An analysis of key trends in the medical schemes industry 2000 - 2012*, Alexander Forbes, Johannesburg.

³ Taylor, J.,R. 2003, "Contracting for Health Services" in *Private Participation for health services*, eds. A. Harding & A. Prekar, World Bank, Washington DC, pp. 157.

sustainability of the medical scheme industry.

There is a need for medical schemes to transition from passive purchasers of health services to strategic purchasers. Many of the mechanisms of strategic purchasing are dependent

on a pre-agreed arrangement between the purchaser and provider. Such an agreement can take the form of a contract. (see Box 2 for description)

Over the past 30 years, many countries have

used contracts as a policy or tool to improve one or aspects of the health system i.e. quality of care, costs of care, access to care and equity of care. Healthcare providers have a significant influence on the increasing utilisation of services and subsequently cost increases.

Evidence has demonstrated that contracting healthcare providers is an important process to improve efficiency in resource use, quality in health care service provision and increased

Box 2: What is a contract?

A contract defined as: “a purchasing mechanism used to acquire a specified service of a defined quantity and quality at agreed-on price from a specific provider for a specific period³”.

accountability, all of which contribute to improving health system performance.

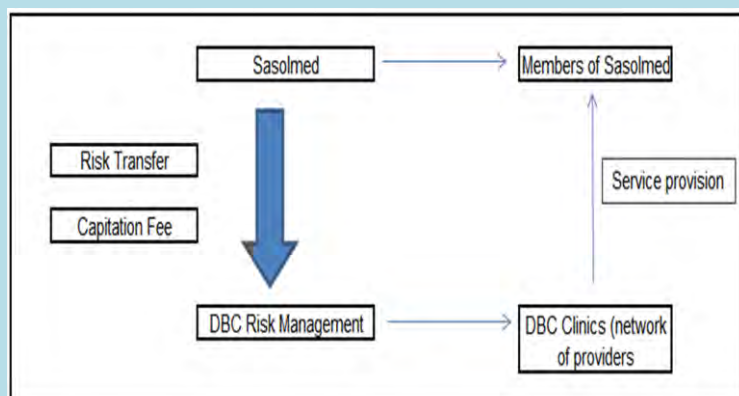
However, majority of the existing contracts between medical schemes and healthcare providers only focus on two dimensions i.e. price and access to create networks of ‘designated service providers’.

By omitting to cater for both equity and quality of care, these existing contracts will have limited impact on the health system performance.

METHODS

The objective of this study was to evaluate all four dimensions of health system performance i.e. access, efficiency, equity and quality of care by analysing the impact of a contractual

Box 3: Contractual Arrangement



arrangement between a medical scheme, Sasolmed and a managed care company, DBC Risk Management with a network of healthcare providers. (See Box 3)

The purpose of the contract was to transfer the back-related risk from Sasolmed to DBC Risk Management, whereby DBC Risk Management will be responsible for the all costs related to back surgery i.e. in-hospital and out-of-hospital costs (ambulatory), in return for the monthly capitation fee. A Back rehabilitation programme was implemented for all Sasolmed members at the various DBC clinics.

Changes in the performance indicators were analyzed, for the 4 year period preceding the

implementation of the contract and 3 year period post implementation.

Risk-adjusted claims data and patient-specific indicators were obtained for the period under review.

Data regarding the contractual arrangement was gathered through document review and archival records.

KEY FINDINGS

Within the context of the contractual arrangement, there are three key stakeholders i.e. Sasolmed, private healthcare funder, DBC Risk Management, a managed care organization and the members of Sasolmed, who require appropriate care for the back and neck medical

conditions. Each stakeholder will have their unique expectations regarding the outcomes.

Efficiency

The hospital costs related to back surgery have decreased since the implementation of the contract, which is related to a reduction in the admission rate. (See Figure 1).

DBC Risk Management has derived a positive financial benefit from the contract thus far, despite that the capitation fee being subjected to an annual reduction factor.

Total cost of back care i.e. in-hospital and out-of-hospital costs, has decreased.

Access: At least 81.5% of the population were within a 30km radius of a DBC clinic since implementation of the contract.

Equity: The contract arrangement covered all members of Sasolmed i.e. 100% of the membership was entitled to receive rehabilitative service for back conditions.

Care guidelines were implemented to ensure that the adequate level of care was provided to each member based on the severity of the back condition.

Quality: Aggregated patient clinical markers for relating to pain intensity, range of motion and electromyogram should considerable improvement upon completion of the 6 week rehabilitation programme. The improvement in quality markers has contributed in the reduction of admissions for back surgery.

WHAT DO THESE FINDINGS MEAN?

The intention of a contractual arrangement is to align incentives between a purchaser and provider, to enable more efficient use of resources resulting in an improvement in health outcomes.

The results from this study underline the value of pre-contractual planning, establishment of obligations of the contracting parties as well as performance

measures and finally the management of the contract.

The outcomes of the study are congruent with the experiences of contracting from around the world regarding access and cost however goes further to demonstrate improved efficiency and quality of care, which other studies do not adequately evaluate.

The results highlight that a precursor to effective contracting, is the need for a framework that balances the needs and rights of the key stakeholders whilst still allowing the intervention to be effective in achieving its objectives.

The specific performance indicators of this study indicate that the requirements of each stakeholder have been met.

POLICY IMPLICATIONS

The current inquiry into the Competition Commission's investigation into the private health sector is aimed at understanding the state, nature and form of

competition in this industry since there is a view that competition is being distorted or prevented. Given the cost escalations associated with private healthcare, continued increases in medical scheme contribution, in excess of inflation is unsustainable. "Bending the cost curve" through the employment of contracts with healthcare providers in one such mechanism. However, there is a need for medical schemes to consider all dimensions of health system performance and not focus solely on cost.

This brief therefore makes the following recommendations:

- The contracting legislation reflected in the Medical Schemes Act and Competition Act is reviewed to create an enabling environment where:
 - healthcare services are procured on quality, access, efficiency, and equity.
 - Allowances are made for the selective contracting of providers to

encourage
competition and
efficiency

- Active promotion of the use of contracts amongst medical schemes by the Council of Medical Schemes.
- Providers of health services should be encouraged enter into risk-sharing contractual agreements so as to differentiate themselves from other providers and demonstrate confidence in their services to purchasers.

and payment of funds were delegated to Sasolmed's administrator, Medscheme, responsible for the administration services.

Therefore the management of the contract formed part of existing service provided to Sasolmed.

(3) The final limitation was that the focus of the study was related to the impact of the contractual arrangement rather than the pre-contractual planning as well as the process of implementation.

STUDY LIMITATIONS

There are a number of limitations related to this study:

(1) The results presented are interim in nature i.e. at mid-point of the contract period. Therefore the results to date should be viewed as tentative but serves to indicate that thus far, the contract is of benefit to all three stakeholders.

(2) The second limitation is that transaction costs were not included in the study. However, the oversight, performance assessment

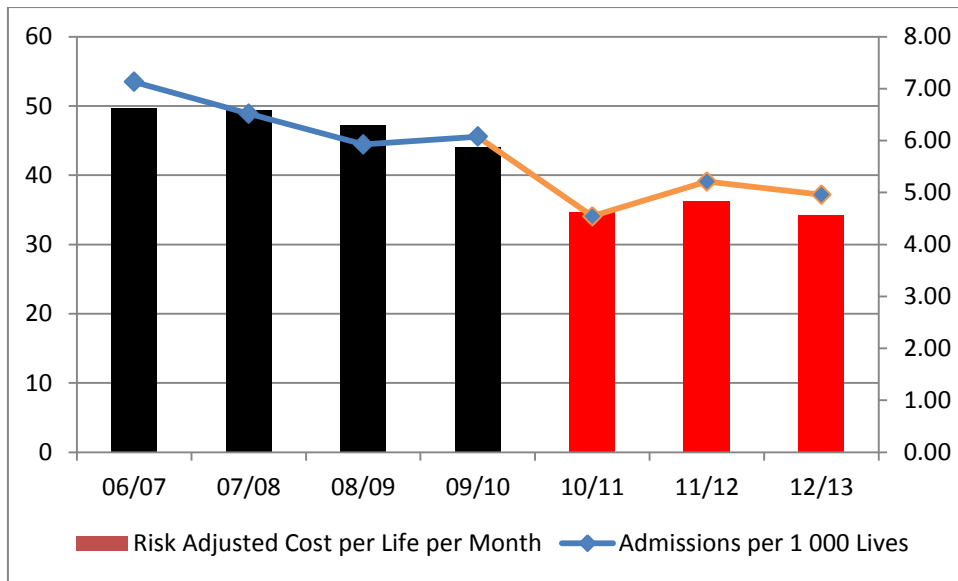


Figure 1: Impact of Admission Rate for back surgery on Hospital costs of Back Care (colours represent pre and post evaluation periods)

Part E: Appendices

Appendix A: Correspondence Requesting Permission to access Data

Mr. J. Human
Chief Executive Officer: DBC Risk Management

14 January 2015

Dear Johan

Re: Permission to access Sasolmed data for the purposes of research

I am writing to you, to seek your assistance with regards to my studies. I have previously mentioned that I was studying towards a Masters degree in Public Health (Health Economics) at the University of Cape Town. I am now at the point in my studies, whereby I am required to undertake research and submit a dissertation in the field of Health Economics.

Given the need to balance costs and access to healthcare, health system financing that comprises of revenue collection, revenue pooling and health purchasing, continues to receive considerable attention from all stakeholders. In terms of purchasing (i.e. the transfer of resources to health care providers in exchange for health services that are purchased on behalf of the population/members), the World Health Organization has been promoting the concept of active purchasing as a mechanism to maximise health system performance.

In this regard, contracting has been identified as an example of active purchasing whereby there is alignment of incentives between purchasers and providers are that ultimately improves the distribution, utilization and cost-effectiveness of health services

Given the increase in utilisation (admission rate) and costs of back-related surgery, Sasolmed realised the need for an alternative model, whereby there is a closer partnership the healthcare providers, and financial incentives are aligned resulting medical scheme members are receiving receive appropriate medical care thereby decreasing the costs of surgery. Subsequently, in August 2010, Sasolmed entered into a risk-sharing contract with

DBC Risk Management for the conservative management of chronic lower-back pain (CLBP).

Therefore my research is intended critically assess the value of contracting as an active purchasing mechanism using the Sasolmed – DBC Risk Management contract as a case study. Ultimately, I aim to:

1. Describe the rationale/background and review the key features of the contractual arrangements between Sasolmed and DBC Risk Management for the treatment of CLBP
2. Describe the process of contract implementation
3. Review the degree of success of the programme from clinical and financial perspectives since inception of the programme (August 2010 until December 2013).
4. Elucidate the underlying factors that have led to observed contractual outcomes.
5. Provide formative information for policy makers, service providers and administrators to promote the correct application of contracting within in health systems.

I would be most grateful, if you grant me permission to access annual clinical outcomes reports, clinical risk reports, quarterly profit calculations reports as well as aggregate beneficiary data in order for me to successfully complete my research.

My proposed research has received ethics approval from the University of Cape Town's Faculty of Health Sciences Human Research Ethics Committee. All information accessed will be kept confidential and used for the sole purpose for the study. Outcomes will be reported at an aggregate level i.e. Scheme-level or patient group-level.

In addition to the ethical considerations above, being an employee of Medscheme, which provides administration and managed care services to Sasolmed, I am bound by contractual employment obligations that extend to treatment of sensitive scheme-specific information.

Finally, prior to the final submission of the research project for examination, you will be provided with a copy of the dissertation to approve of the DBC-specific information contained within the dissertation.

Regards

Ravi Pillay (pllrav009)

Health Economics Unit - School of Public Health and Family Medicine

University of Cape Town

Phone: 021 4663274

Email: pllrav009@myuct.co.za / ravip@medscheme.co.za

Dr.S.Smit

Principal Officer: Sasolmed

14 January 2015

Dear Chantal

Re: Permission to access Sasolmed data for the purposes of research

I am writing to you, to seek your assistance with regards to my studies. During last year's Board of Healthcare Funders conference, I mentioned that I was studying towards a Masters degree in Public Health (Health Economics) at the University of Cape Town. I am now at the point in my studies, whereby I am required to undertake research and submit a dissertation in the field of Health Economics.

Given the need to balance costs and access to healthcare, health system financing that comprises of revenue collection, revenue pooling and health purchasing, continues to receive considerable attention from all stakeholders. In terms of purchasing (i.e. the transfer of resources to health care providers in exchange for health services that are purchased on behalf of the population/members), the World Health Organization has been promoting the concept of active purchasing as a mechanism to maximise health system performance.

In this regard, contracting has been identified as an example of active purchasing whereby there is alignment of incentives between purchasers and providers are that ultimately improves the distribution, utilization and cost-effectiveness of health services

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3. Review the degree of success of the programme from clinical and financial perspectives since inception of the programme (August 2010 until December 2013).
4. Elucidate the underlying factors that have led to observed contractual outcomes.
5. Provide formative information for policy makers, service providers and administrators to promote the correct application of contracting within in health systems.

I would be most grateful, if you grant me permission to access Sasolmed scheme rules, benefit schedules, annual clinical outcomes reports, clinical risk reports, quarterly profit calculations reports as well as aggregate beneficiary data in order for me to successfully complete my research.

My proposed research has received ethics approval from the University of Cape Town's Faculty of Health Sciences Human Research Ethics Committee. All information accessed will be kept confidential and used for the sole purpose for the study. Outcomes will be reported at an aggregate level i.e. Scheme-level or patient group-level.

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Regards

Ravi Pillay

Health Economics Unit - School of Public Health and Family Medicine

University of Cape Town

Phone: 021 4663274

Email: pllrav009@myuct.co.za / ravip@medscheme.co.za

Appendix B: Ethics Approval Letter



UNIVERSITY OF CAPE TOWN
Faculty of Health Sciences
Human Research Ethics Committee



Room ES2-24 Old Main Building
Groota Schuur Hospital
Observatory 7925
Telephone [021] 406 6492 • Facsimile [021] 406 6411
Email: Sumayah.ariel@uct.ac.za
Website: www.health.uct.ac.za/hhs/research/humanethics/forms

06 August 2014

HREC/REF: 545/2014

Dr A Honda
Health Economics Unit
Public Health & Family Medicine
FHS

Dear Dr Honda

Project Title: A SOUTH AFRICAN CASE STUDY: VALUE OF CONTRACTING AS AN ACTIVE PURCHASING MECHANISM (MPhil Candidate-Ravi Pillay)

Thank you your response letter dated 05 August 2014, addressing the issues raised by the Human Research Ethics Committee (HREC).

It is a pleasure to inform you that the HREC has **formally approved** the above mentioned study.

Approval is granted for one year until the 30 August 2015.

Please submit a progress form, using the standardised Annual Report Form, if the study continues beyond the approval period. Please submit a Standard Closure form if the study is completed within the approval period.

We acknowledge that the following student- R Pillay is also involved in this study.

Please note that the on-going ethical conduct of the study remains the responsibility of the principal investigator.

Please quote the HREC REF in all your correspondence.

Yours sincerely

PROFESSOR M BLOCKMAN
CHAIRPERSON, HSF HUMAN ETHICS

Federal Wide Assurance Number: FWA00001637.

Institutional Review Board (IRB) number: IRB00001938

Hrec/ref:545/2014

Appendix C: Information for Authors

INFORMATION FOR AUTHORS

Health Policy and Planning's aim is to improve the design and implementation of health systems and policies in low- and middle-income countries through providing a forum for publishing high quality research and original ideas, for an audience of policy and public health researchers and practitioners. HPP is published six times a year.

HPP has a double-blinded peer-review policy. All papers, in each of the categories described below, are peer reviewed.

Specific objectives are to:

- Attract high quality research papers, reviews and debates on topics relevant to health systems and policies in low- and middle-income countries;
- Ensure wide geographical coverage of papers including coverage of the poorest countries and those in transition;
- Encourage and support researchers from low- and middle-income countries to publish in *HPP*;
- Ensure papers reflect a broad range of disciplines, methodologies and topics;
- Ensure that papers are clearly explained and accessible to readers from the range of disciplines used to analyse health systems and policies; and
- Provide a fair, supportive and high quality peer review process.

Health Policy and Planning welcomes submissions of the following types: original articles, review papers, methodological musings, research in practice, commentaries, and papers in our series 'How to do (or not to do)...' [for example, see [Hutton & Baltussen, HPP, 20\(4\): 252-9](#)] and '10 best resources' [for example, see [David & Haberland, HPP, 20\(4\): 260-3](#)].

Authors should pay close attention to the factors that will increase likelihood of acceptance. As well as the high overall quality required for publication in an international journal, authors should address HPP's readership: national and international policy makers, practitioners, academics and general readers with a particular interest in health systems and policy issues and debates in low- and middle-income countries. Manuscripts that fail to set out the international debates to which the paper contributes, and to draw out policy lessons and

conclusions, are more likely to be rejected or returned to the authors for redrafting prior to being reviewed. In addition, economists should note that papers accepted for publication in HPP will consider the broad policy implications of an economic analysis rather than focusing primarily on the methodological or theoretical aspects of the study.

Public health specialists writing about a specific health, policy, challenge or service should discuss the relevance of the analysis for the broader health system. Those submitting health policy analyses should draw on relevant bodies of theory in their analysis, or justify why they have not, rather than only presenting a narrative based on empirical data.

The editors cannot enter into correspondence about papers considered unsuitable for publication and their decision is final. Neither the editors nor the publishers accept responsibility for the views of authors expressed in their contributions. The editors reserve the right to make amendments to the papers submitted although, whenever possible, they will seek the authors' consent to any significant changes made.

Manuscripts must be submitted online. Once you have prepared your manuscript according to the instructions below please visit the [online submission website](#). Instructions on submitting your manuscript online can be viewed [here](#).

Manuscripts containing original material are accepted for consideration with the understanding that neither the article nor any part of its essential substance, tables, or figures has been or will be published or submitted for publication elsewhere. This restriction does not apply to abstracts or short press reports published in connection with scientific meetings. Copies of any closely related manuscripts should be submitted along with the manuscript that is to be considered by *HPP*. *HPP* discourages the submission of more than one article dealing with related aspects of the same study.

Should you require any assistance in submitting your article or have any queries, please do not hesitate to contact the editorial office at hpp.editorialoffice@oup.com

During the online submission procedure, authors are asked to provide: a) information on prior or duplicate publication or submission elsewhere of any part of the work; b) a statement of financial or other relationships that might lead to a conflict of interest or a statement that the authors do not have any conflict of interest; c) a statement that the manuscript has been read and approved by all authors (see also section on authorship below); d) the name,

address, telephone and fax number of the corresponding author who is responsible for negotiations concerning the manuscript. The manuscript must be accompanied by copies of any permissions (see heading Permissions below) to reproduce already published material, or to use illustrations or report sensitive personal information about identifiable persons.

All papers submitted to HPP are checked by the editorial office for conformance to author and other instructions all specified below. Nonconforming manuscripts will be returned to authors.

AUTHORSHIP

All persons designated as authors should qualify for authorship. The order of authorship should be a joint decision of the co-authors. Each author should have participated sufficiently in the work to take public responsibility for the content. Authorship credit should be based on substantial contribution to conception and design, execution, or analysis and interpretation of data. All authors should be involved in drafting the article or revising it critically for important intellectual content, must have read and approved the final version of the manuscript and approve of its submission to this journal. An email confirming submission of a manuscript is sent to all authors. Any change in authorship following initial submission would have to be agreed by all authors as would any change in the order of authors.

SUBMISSION

Please read these instructions carefully and follow them closely to ensure that the review and publication of your paper is as efficient and quick as possible. The Editorial Office reserve the right to return manuscripts that are not in accordance with these instructions.

All material to be considered for publication in Health Policy and Planning should be submitted in electronic form via the journal's online submission system. Once you have prepared your manuscript according to the instructions below, instructions on how to submit your manuscript online can be found by clicking [here](#).

[Return to top of page.](#)

LANGUAGE EDITING PRE-SUBMISSION

OUP offers pre-submission language editing through Oxford Language Editing, a service for researchers all over the world. Language editing, particularly if English is not your first language, can be used to ensure that the academic content of your paper is fully understood by the journal editors and reviewers. Visit <http://www.oxfordlanguageediting.com> to find out more about the freelance editors available and the different services offered. Please note that edited manuscripts will still need to undergo peer-review by the journal.

MANUSCRIPT TYPES AND PREPARATION

- original articles
- review papers
- methodological musings
- research in practice
- commentaries
- papers in our series 'How to do (or not to do)...' [for example, see [Hutton & Baltussen, HPP, 20\(4\): 252-9](#)] and
- '10 best resources' [for example, see [David & Haberlen, HPP, 20\(4\): 260-3](#)].

ORIGINAL RESEARCH

Manuscripts should preferably be a maximum of 6000 words, excluding tables, figures/diagrams and references.

The **title page** should contain:

- Title - please keep as concise as possible and ensure it reflects the subject matter;
- Corresponding author's name, address, telephone/fax numbers and e-mail address;
- Each author's affiliation and qualifications;
- Keywords and an abbreviated running title;
- 2-4 Key Messages, detailing concisely the main points made in the paper;
- Acknowledgements
- A word count of the full article.

The manuscript will generally follow through sections: Abstract (no more than 300 words), Introduction, Methods, Results, Discussion, Conclusion, References. However, it may be appropriate to combine the results and discussion sections in some papers. Tables and Figures should not be placed within the text, rather provided in separate file/s.

In the **acknowledgements**, all sources of funding for research must be explicitly stated, including grant numbers if appropriate. Other financial and material support, specifying the nature of the support, should be acknowledged as well.

Figures should be designed using a well-known software package for standard personal computers. If a figure has been published earlier, acknowledge the original source and submit written permission from the copyright holder to reproduce the material. Colour figures are permitted but authors will be required to pay the cost of reproduction.

All **measures** should be reported in SI units, followed (where necessary) by the traditional units in parentheses. There are two exceptions: blood pressure should be expressed in mmHg and haemoglobin in g/dl. For general guidance on the International System of Units, and some useful conversion factors, see 'The SI for the Health Professions' (WHO 1977).

Statistics:

For the reporting of statistical analyses please consider the following additional points:

- Focus the statistical analysis at the research question.
- Report simple analyses first, then only more sophisticated results.
- Provide information about participation and missing data.
- As much as possible, describe results using meaningful phrases (E.g., do not say "beta" or "regression coefficient", but "mean change in Y per unit of X"). Provide 95% confidence intervals for estimates.
- Report the proportions as N (%), not just %.
- Report p values with 2 digits after the decimal, 3 if <0.01 or near 0.05. E.g., 0.54, 0.03, 0.007, <0.001, 0.048. Do not report p values greater
- than 0.05 as "NS".
- Always include a leading zero before the decimal point (e.g., 0.32 not .32).
- Do not report tests statistics (such as chi-2, T, F, etc)."

REVIEW ARTICLES:

Manuscripts should preferably be a maximum of 10,000 words, excluding tables, figures/diagrams and references. Reviews may be invited. They generally address recent advances in health policy, health systems and implementation. Systematic reviews are

particularly welcomed, but may not be appropriate for every topic. If authors are submitting a review article that is not a systematic review then the paper should explain why a systematic review was not feasible/desirable, and the review methods should be described in a way that is as clear and as replicable as possible.

The **title page** should contain:

- Title - please keep as concise as possible and ensure it reflects the subject matter;
- Corresponding author's name, address, telephone/fax numbers and e-mail address;
- Each author's affiliation and qualifications;
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Commentaries – Short commentaries on topical issues in health systems are welcomed. Most such commentaries are commissioned by the editors, but the journal will also consider unsolicited submissions. Commentaries should be of broad interest to readers of Health Policy and Planning, and while they are not research papers, they should be well substantiated. Manuscripts should preferably be a maximum of 1200 words, excluding tables, figures/diagrams and references.

The **title page** should contain:

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- Each author's affiliation and qualifications;
- Keywords and an abbreviated running title;
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HOW TO DO...OR NOT TO DO

This series is meant to explain how to use a particular research or analytical method (e.g. social network analysis, discrete choice experiment etc). The research or analytical methods discussed should be well accepted and clearly defined: this category of paper is not meant to address methodological debates but rather to help disseminate and promote the use of well-accepted methodologies.

Manuscripts should preferably be a maximum of 3000 words excluding tables, figures/diagrams and references.

The sections must be arranged as follows: i) Title page, ii) Abstract, iii) Introduction, iv) Body of the paper, and v) References. Main sections should be coordinated by the author, and inserted between Introduction and Reference sessions. Please contact our office before submitting a manuscript in this category.

The **title page** should contain:

- Title - please keep as concise as possible and ensure it reflects the subject matter;
- Corresponding author's name, address, telephone/fax numbers and e-mail address;
- Each author's affiliation and qualifications;
- Keywords and an abbreviated running title;
- 2-4 Key Messages, detailing concisely the main points made in the paper;
- Acknowledgements
- A word count of the full article.

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10 best -is a series of articles that identify and outline the 10 most useful resources from a range of sources to help facilitate a better understanding of a particular issue in global health'

We often commission these articles but we also hear unsolicited suggestions.

METHODOLOGICAL MUSINGS

This series is meant to address methodological issues in health policy and systems research, where there is currently a lack of clarity about accepted research methods. This series is intended to support the development of the health policy and systems research field, through supporting methodological discussion.

Manuscripts should preferably be a maximum of 3000 words, excluding tables, figures/diagrams and references.

The sections must be arranged as follows: i) Title page, ii) Abstract, iii) Introduction, iv) Body of the paper, and v) References. Main sections should be coordinated by the author, and inserted between Introduction and Reference sessions. Please contact our office before submitting a manuscript in this category.

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RESEARCH IN PRACTICE

Research in practice provides an opportunity for researchers, policy makers and programme managers to reflect on their experiences of translating health policy and systems research into practice.

Manuscripts should preferably be a maximum of 3,000 words.

MANUSCRIPT FORMAT AND STYLE

Only articles in English are considered for publication

Prepare your manuscript, including tables, using a word processing program and save it as a .doc, .rtf or .ps file. Use a minimum font size of 11, double-spaced and paginated throughout including references and tables, with margins of at least 2.5 cm. The text should be left justified and not hyphenated.

Manuscript file must include text body. Title Page, Figures and Tables should be uploaded separately.

Manuscript Preparation:

- Page 1: Title Page - please keep as concise as possible and ensure it reflects the subject matter;

- Corresponding author's name, address, telephone/fax numbers and e-mail address;
- Each author's affiliation and qualifications;
- Keywords and an abbreviated running title;
- 2-4 Key Messages, detailing concisely the main points made in the paper;
- Acknowledgements
- A word count of the full article.

Page 2: Abstract

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