

A study on strategic planning and procurement of medicals in Uganda's regional referral hospitals

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Abstract

This study was an analysis of the effect of strategic planning on procurement of medicals in Uganda's regional referral hospitals (RRH's). Medicals were defined as essential medicines, medical devices and medical equipment. The Ministry of Health (MOH) has been carrying out strategic planning for the last 15 years via the Health Sector Strategic Plans. Their assumption was that strategic planning would translate to strategic procurement and consequently, availability of medicals in the RRH's. However, despite the existence of these plans, there have been many complaints about expired drugs and shortages in RRH's. For this purpose, a third variable was important because it served the role of mediation. A questionnaire was used to obtain information on perceptions of 206 respondents who were selected using simple random sampling. 8 key informant interviews were held, 2 in each RRH. 4 Focus Group Discussions were held, 1 for each RRH, and between 5 and 8 staff took part as discussants for approximately three hours. The findings suggested that strategic planning was affected by funding to approximately 34% while the relationship between funding and procurement was 35%. The direct relationship between strategic planning and procurement was 18%. However when the total causal effect was computed it turned out that strategic planning and the related variable of funding contributed 77% to procurement of medicals under the current hierarchical model where MOH is charged with development of strategic plans for the entire health sector. Since even with this contribution there were complaints, the study proposed a new model called CALF which according to a simulation, if adopted by MOH, strategic planning would contribute 87% to effectiveness in procurement of medicals.

Introduction

Strategic planning was defined by this study as the process of identifying organisational objectives, devising appropriate strategies to

allocate the available resources by way of priority to realise the set objectives, assessing the impact of the chosen strategy, and finally taking remedial action where the chosen strategy does not achieve the set objectives. As a concept, strategic planning was introduced in the early 1960s and has been subject to various degrees of attention over the years.¹ It continues to receive increased attention by practitioners with some,² arguing that strategic planning no longer matters because it does not drive the overall strategy of companies. Despite the above, strategic planning cannot be discounted, while high-velocity environments might make formal planning difficult to practice, the downfall of strategic planning as an activity would be an exaggeration.³ In response to fast changing environments,³ argues that strategic planning processes have become more decentralised and informal with inevitably shorter planning time horizons.

Strategic planning is practiced by health-care organisations and appears to be a well-regarded process among executives.⁴ This was however in contrast with,⁵ who stated that little information was known about the extent to which healthcare organisations conducted formal strategic planning or how it affected performance. This study therefore aimed to adding on the available empirical evidence on strategic planning in the healthcare sector, particularly in the procurement of medicals.

The main purpose of this study was to analyse the effect of strategic planning on procurement of medicals in Uganda's regional referral hospitals. To attain that purpose, the following research hypotheses were formulated:

- H₀1: The funding of regional referral hospitals has no effect on strategic planning.
- H_A1: The funding of regional referral hospitals has an effect on strategic planning.
- H₀2: The procurement of medicals in RRH's does not have a direct relationship with funding.
- H_A2: The procurement of medicals in RRH's has a direct relationship with funding.
- H₀3: Procurement of medicals does not have a positive contribution to realisation of strategic plans in RRH's.
- H_A3: Procurement of medicals has a positive contribution to realisation of strategic plans in RRH's.

Materials and Methods

Study design

Fieldwork was done between 2014 and 2015, applying primary and secondary data collection.

Quantitative tests was used to describe and

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test relationships that examines cause and effect interactions among variables.⁶ Qualitative assessment tools were used to analyse data collected.

Study areas

By the time of this study there were 13 regional referral hospitals in Uganda. Since it would be practically hard to carry out exhaustive study on all the 13 hospitals, purposive sampling was used to select a sample of four out of the thirteen regional referral hospitals. One hospital was chosen from each region, and these included; Gulu in the North; Masaka in Central; Mbale in the East; and Mbarara in the West.

Sample size

The sample of 206 respondents was selected from a population of 1,219 using the formula proposed by de Vaus.⁷ 51% of the respondents were male while 49% were female.

Data collection methods and instruments used for interviews

The study adopted and employed a range of different interviewing styles.⁷ The interviews were tape-recorded and later transcribed because the interest of this study was not just in the kind of responses that were provided,

but also in the way that the respondents provided the information.

Observation

Observation involved recording notes to assist in determining what the observed events might mean and acting as leads to provide answers to the research questions during subsequent data analysis.⁸ The issues that were observed ranged from whether the plans are displayed on the notice boards through to actual delivery of the medicals. It also included physical observation of the hospital wards, operating theatres, storage areas and general hospital premises.

Document review

The documents reviewed included the annual procurement plans for the respective RRH's, Health Sector Strategic Plans, Annual Health Sector Performance Reports, relevant Ministry of Health reports, National Health Policy, National Hospital Policy, National Drug Policy, Order forms for medicals, delivery schedules, journal articles, books, magazine articles and newspaper publications.

Focus group discussion

The specific topic for discussion was introduced and followed up with guiding questions and the participants freely deliberated on the topic, giving their ideas/opinions. The major advantage of this method was that it involved real stakeholders,⁹ and was thus helpful in bringing to the surface issues that had otherwise not been emphasised by the other methods employed in the study.

Questionnaire

The questionnaire consisted of 94 items divided into four sections: i) Personal Characteristics; ii) Strategic Planning; iii) Funding of Regional Referral Hospitals; and iv) Procurement of medicals. The questions in sections ii, iii and iv were scored in a Likert scale (5: strongly agree; 4: agree; 3: uncertain; 2: disagree; and 1: strongly disagree).¹⁰

Analysis of data

The data obtained from the questionnaires were quantitatively analysed using the SPSS 18.0 software program.¹¹ At the univariate level, descriptive statistics were used, and this included distribution analysis of frequencies and percentages. At the bivariate level analysis, inferential statistics were applied to study the relationship between the variables under study in order to determine the correlation. Multivariate level analysis included regression analysis to determine the effect of the independent variable on the dependent variable.

The responses and opinions obtained from interviews and focus group discussions were

qualitatively analyzed using three methods: i) thematic analysis ii) comparative analysis and iii) content analysis.

Ethical consideration

Authorisation was obtained from National Council for Science and Technology, Ministry of Health, National Medical Stores and the respective regional referral hospitals. The purpose of the study was also explained to all the respondents and their informed consent was obtained.

Results and Discussion

Strategic planning in RRH's

Strategic planning in the health sector was a hierarchical approach with Ministry of health being at the pinnacle and charged with development of plans for the entire health sector. In order to improve on planning for essential medicines and health supplies, the Pharmacy Division in the MOH set up the Quantification and Procurement Planning Unit (QPPU) in 2010. The information compiled by the QPPU on national medicine needs formed the basis upon which resources for health commodities were mobilised to ensure adequate supplies were available. This unit was responsible for

estimating the quantity of medicals that were required by each RRH and consequently, the amount of funds that were to be allocated to each of them during preparation of the draft budget estimates for MOH. Under this hierarchical approach to planning, the RRH's did not have strategic plans for procurement of medicals; they just operationalized the Health Sector Strategic Plans as developed by MOH via preparation of annual procurement plans that were based on the funding that was indicated as available.

The current hierarchical approach to planning has removed the RRH's from direct participation in the planning process, yet each region has its unique environment which may require each regional referral hospital to have its own strategic plan. For example, the western region was experiencing an influx of refugees from Democratic Republic of Congo (DRC) and Burundi due to the instability in the two countries. The northern region was experiencing the nodding disease syndrome which was specific to that area, coupled with entire populations that were returning from camps of internally displaced persons. This is in addition to refugees from South Sudan and DRC. The eastern region was prone to mudslides while the central region had a high population and higher incidence of HIV than other areas. The planning process should therefore be decentralised to the regional referral hospi-

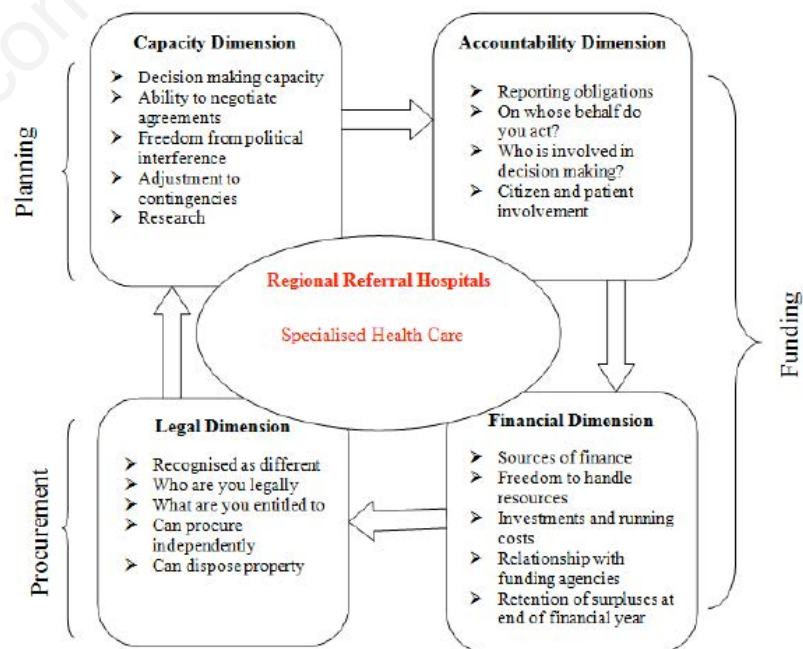


Figure 1. Theoretical aspects of the CALF model of strategic procurement of medicals in Regional Referral Hospitals.

tal level because these hospitals know their individual challenges as opposed to collectively suggesting the same solutions to situations that are not similar.

Funding of regional referral hospitals

The determinant of the quantity and to some extent the quality of medicals to be procured was the amount of funds that had been indicated as available to the RRH's based on the requirements as estimated by the QPPU in MOH. This similarly meant that the RRH's were not involved in determining the amount of resources that were allocated to them for procurement of medicals. At the sector level, GOU funding to the sector was still not adequate. Budgetary expenditure as a percentage of total government expenditure stood at 8.58% on average, which was far below the recommended level of 15% as agreed at the Abuja 2001 meeting. The allocation was in reality reducing from as much as 9.7% in 2004/2005 to 6.7% in 2015/16. The second Health Sector Strategic Plan of 2005/6 – 2009/10 had targeted allocating at least 13.2% of the GOU budget on health by 2009/10, which target was not achieved. Similarly, the third Health Sector Strategic and Investment Plan of 2010/11 – 2014/15 had targeted allocating a minimum of 15% of the GOU budget by 2014/2015 but it was also not achieved as it stood at 6.7% in 2014/15, which was less than half of the desired target. This put into question the Government's commitment to providing adequate funding to the health sector in general, and medicals in particular through budgetary allocations.

What was more critical was that the available resource envelop could not match the population growth rate and the increasing disease burden, which meant that in the short run, there would not be enough resources for the health sector to function to capacity. The need to increase the income and resource base of the RRH's was, therefore, paramount if the inherent underfunding was to be addressed. To achieve this end, the hospitals have to be given autonomy so that they can participate in mobilizing the required resources unlike the current situation where they have no role.

Procurement of medicals in RRH's

Ministry of Health through the National Medical Stores statute of 1993 delegated the drug supply function to National Medical Stores (NMS), an autonomous institution that replaced the former Central Medical Stores (CMS) which was a department of the Ministry of Health. NMS is mandated to Procure, Stores & Distribute Essential Medicines and Medical Supplies to all public health facilities in the country, including RRH's. The latter therefore had no major role in procurement of medicals, as the determination of requirement was done by the QPPU in MOH and the physical pur-

chase was delegated to NMS. The role of the RRH's was confined to preparation of annual procurement plans, ordering, receipt and storage of the medicals.

The RRH's were not involved in either the quantification or procurement of medicals yet for the efficient supply of medicals, there should be a strong link between forecasting, quantification, funding and procurement which was not the case with the RRH's. This lack of harmonisation between the three aspects of hospital governance (Planning, Funding and Procurement) highlighted the role of hospital-level decision making and how it was shaped by the different stakeholders. This raised the need to grant individual hospitals the ability to make their own strategic, financial in addition to clinical decisions and thus, become semi-autonomous within the public sector.

Testing of hypotheses

Having discussed and analysed issues to do with strategic planning, funding and procurement, it was necessary to measure the relationship between the variables. The hypotheses were tested using correlation analysis to establish the relationship. Linear regression analysis was also used to predict the value of the variables in the model.

Hypothesis 1 (Strategic Planning and Funding)

The correlation coefficient [$r(206)=0.59, P<0.01$] shows that that there was a positive and significant relationship between strategic

planning and funding of RRH's. The implication of this finding was that, strategic planning need more funding or put differently, the more funding the RRH had the more it got active in strategic planning. The first output of the simple linear regression was a model summary. This yielded an adj. R^2 of 0.34 which implied that funding had 34% effect on strategic planning in RRH's in Uganda. The remaining 66% can be explained by other factors which were outside the current model and, therefore, not analyzed. The second output analyzed using ANOVA helped to establish the linearity between the two variables which was $F(1,204)=106.600, P<0.01$. This shows that there was a linear relationship. Based on the coefficients it was stated that: $\text{Beta}=0.59, P<0.01$, the null hypothesis was therefore rejected and the alternative hypothesis supported.

Hypothesis 2 (Funding and Procurement)

The results of the correlations test [$r(206)=0.59, P<0.01$] indicated a moderate relationship between funding and procurement. Simple linear regression indicated a linear relationship between procurement and funding [$F(1,204)=110.919, P<0.01$]. Based on this linearity, it can be concluded that an increase in funding leads to an increase in the volume of medicals that are procured and similarly a decrease in funding would also lead to a decrease in the volume of medical procured. The adjusted R^2 produced by the regression test was 0.35, which indicated that the model

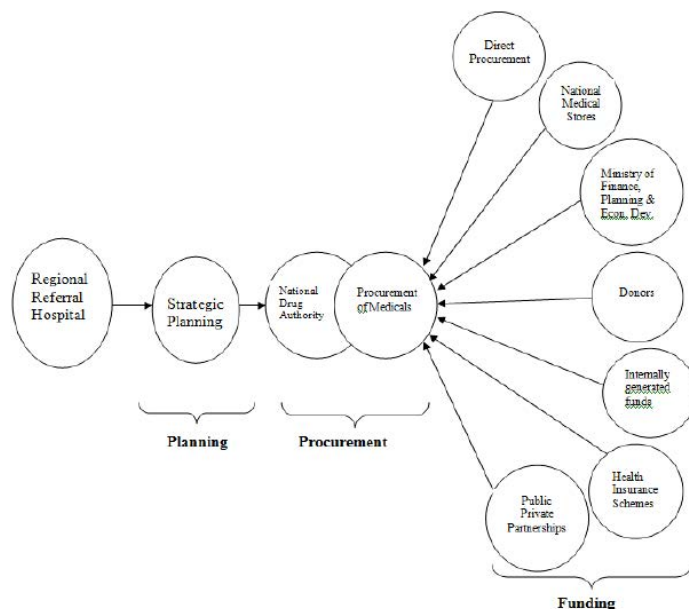


Figure 2. Practical aspects of the CALF model of strategic procurement of medicals in Regional Referral Hospitals.

explained 35% of the variation in the dependent variable (Procurement of medicals). The remaining 65% could be explained by other factors which were outside the model of the current study. The relationship between procurement and funding was moderate [$r = 0.59$, $P < 0.01$]. Therefore the null hypothesis was rejected and the alternative hypothesis (H_1) *The procurement of medicals in regional referral hospitals has a direct relationship with funding* was supported.

Hypothesis 3 (Strategic Planning and Procurement)

The results of the correlation test indicated a positive and moderate relationship between strategic planning and procurement of medicals in regional referral hospitals [$r(206) = 0.42$, $P < 0.01$]. The hypothesis was also tested using simple linear regression in order to establish the contribution of strategic planning to procurement of medicals in regional referral hospitals. The results indicated a linear relationship [$F(1,204) = 44.278$, $P < 0.01$] which implied that an increase in procurement of medicals leads to an increase in realization of strategic plans and the reverse is also true. The test produced an R^2 value of 0.18, indicating that the model explained 18% of the variations in the dependent variable. The regression test also revealed a moderate positive significant relationship between strategic planning and procurement of medicals [$r = 0.42$, $P < 0.01$]. The null hypothesis (H_0), *Procurement of medicals does not have a positive contribution to realisation of strategic plans in regional referral hospitals* was thus rejected and the alternative supported.

Determining the total causal effect of strategic planning

The findings have shown that the effectiveness of both strategic planning and procurement was moderated by funding. To determine the total causal effect of strategic planning on procurement, a path analysis method was applied. The model considered all the three hypotheses that were tested in this study and the associated path coefficients.

Decomposition of the model and its effect

The indirect effect of strategic planning on procurement of medicals was calculated by multiplying the path coefficients for each path from strategic planning to procurement of medicals, that is; strategic planning to funding to procurement of medicals = $0.59 \times 0.59 = 0.35$. The implication is that the total indirect effect of strategic planning on procurement of medicals is 0.35. The direct effect of strategic planning on procurement of medicals was added to this indirect effect to establish the

total causal effect of strategic planning on procurement of medicals, that is; $0.35 + 0.42 = 0.77$ (77%). Based on the decomposition of the model and its outcome, it can be concluded that strategic planning is a major determinant of procurement of medicals, which confirms that procurement of medicals can be planned strategically. The other factors that account for the 23% can be considered trivial in planning for the procurement of medicals.

Although, with this contribution (77%) there were complaints, the study proposed a new model called CALF, which had a market oriented perspective. The CALF model of strategic procurement of medicals emphasised the importance of granting individual hospitals autonomy to make their own strategic, financial and clinical decisions as a way of improving their efficiency and effectiveness. This autonomy informs the four dimensions and these are: Capacity; Accountability; Legal; and Financial. The model is depicted in Figures 1 and 2.

Legal dimension

This dimension is concerned with what legal form the RRH's will assume in view of the increased autonomy, but at the same time preserves the public values in a market oriented model. To this end, the model proposed that the hospitals will be *public entities with delegated management*. In this way, while remaining part of the public sector, the hospitals will possess legal personality to perform a public service while enjoying administrative and financial autonomy within a given framework.

Financial dimension

The financial dimension is the pivot of all the operations of the RRH's in the CALF model. The current situation is that the hospitals' operate in a tightly controlled environment which does not allow them to make any capital investments or bear any financial risk, yet they need to adjust to the market forces (competing with the private sector) by factoring in patients needs and a variety of stakeholder concerns. The model suggested the need to adopt a market oriented approach where the resources allocated to the hospitals (from government) are tagged to performance and an adjustment to allow the RRH's to retain the unspent balances at the end of the financial year. There should also be considerable autonomy for them to exploit additional sources of financing like public private partnerships, health insurance schemes and arranging loans. However, there is need for some level of government control because resources have the potential of altering the balance of payments position in the economy.

Capacity dimension

The capacity dimension was critical to the proposed structure of the hospitals as this autonomy is vital to the relationships that the hospitals will create. There is therefore, need to clearly specify which decisions the RRH's can carry out for purposes of responsiveness, quality, efficiency and effectiveness in the course of operation. These decisions should as much as possible be free from undue political interference and control.

Accountability dimension

Accountability of the RRH's is a wide dimension and it ranges from clearly stipulating on whose behalf the hospitals are acting right to their reporting obligations. Given that the decisions taken by the hospitals are complex and they involve multiple agents, there is need to ensure that these hospitals are accountable for the processes, procedures, performance and financial compliance. Much as the underlying logic behind autonomy is to limit political interference and control, there is need for creating political buffers by way of accountability, for autonomy may have repercussions whose effects may be performance related and ultimately political.

Feasibility of the CALF model of strategic procurement of medicals

The feasibility of the model was tested using the regression equation

$$Y = a + bX,$$

where:

Y = Predicted value

a = the total causal effect (which is fixed at 77% based on the path analysis)

b = non-causal effect

X = path coefficient of the direct effect

$$Y = 0.77 + 0.23 \times 0.42$$

$$Y = 0.77 + 0.10$$

$$Y = 0.87$$

The simulation produced a value of 87%. The interpretation is that there will be a 10% increment (87-77%) if the CALF model of strategic procurement of medicals is implemented.

Conclusions

Planning for procurement of medicals in regional referral hospitals is still demanding, and as the study has established, funding is quite a central component. Efforts to improve on the efficiency and effectiveness of the RRH's should therefore be focused on expanding the income and resource base by exploit-

ing additional sources of financing, but with a regulated framework.

Recommendation

While health leaders are involved in many aspects of management, they are, ultimately, assessed on their ability to adopt healthcare organisations to novel and unexpected events. This revolves around asking questions to do with what the organisation should aim for and how it should deliver healthcare services in the long run. This can best be answered by the CALF model of strategic procurement of medicals which is aimed at achieving a balance between National health policy and operational hospital management at the regional referral hospital level in order to improve on efficiency and effectiveness.

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