Influence of health care financing on availability of medicines in public health facilities in Bungoma County, Kenya.

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Abstract- Availability of medicines is an important aspect in health care provision. Many countries however, are still battling with the problem of stock outs of essential medicines to an extent that patients go without appropriate treatment. This research sought to determine the influence of health care financing on availability of medicines. Descriptive cross sectional research design was used. All the nine sub county hospitals in Bungoma County were sampled. Census sampling was done to sample sub county pharmacists, medical superintendents, procurement officers and health administrative officers. Four officers were sampled in each sub county, making a total of 36 respondents for the study. Additionally, the head of procurement department in the county, the chief officer for health and sanitation and the county pharmacist were sampled, hence a total of 39 respondents. Semi structured questionnaires; in-depth interview guides and a checklist were data collection tools. Data was analyzed using descriptive statistics appropriately then presented in tables. Data of qualitative nature was reported in narrative form. The overall percentage availability of medicines in the county was at 63.35% while the mean stock out period was 51.30 days in a 90 days review period. The key financing challenges identified were allocation of inadequate funds for medicines and irrational budgeting which contributed to the low medicines availability. The total allocation for health care was about Kshs 2.6 Billion, out of which only Ksh 120 million (4.6%) was for medicines. A budgetary deficit of between 30 to 40% was reported in more than half of the health facilities. 90.6% of respondents agreed that inadequate funding was the main reason for stock out of medicines. 71.9% of respondents further strongly agreed that allocation of funds for medicines should be as per the quantification needs to curb this problem.

Index Terms- health care financing, out of stock, quantification, medicines

I. INTRODUCTION

Over the years, the pharmaceutical industry has experienced various developments which have positively transformed the health sector. As a result, it is now easier to manage and prevent various diseases and reduction in overall health care costs [1]. Medicines are essential in reduction of mortality and morbidity associated with diseases. Lack of medicines, particularly in public health facilities is one of the reasons for low access to essential medicines. Many countries are faced with the challenge of lack medicines more so in Africa, where it is estimated that about 50% of population lacks medicines they so much need. In India, it is estimated that about 60% of the population have very limited access to essential medicines [2].

In Kenya, a study by the then ministries of medical services and public health revealed that public health facilities experienced stock outs of essential medicines for a period of about 46 days in a year [3]. Frequent stock outs of emergency medicines forces public health facilities to incur unplanned budgetary expenses by diverting allocations meant for other functions such as development projects [4]. In addition, stock outs of medicines in public health facilities forces patients to go to privately owned health facilities which are expensive. They consequently spend more on their medicines while those who are unable to pay go without being treated [5].

Lack of adequate budgetary allocation is a major contributor to stock outs of essential medicines across the world. Annually, the global spending on health care provision is about USD 3 trillion. Low income countries spend about 5% of their GDP while developed ones spend more than 15% of their GDP on health [5]. The Abuja declaration (2001) stipulates that each country should at least allocate about 15% of their total budget to health sector. This ensures that enough is available for operations of various aspects of health sector. Despite this collective agreement, many countries still allocate very little to health, hence the numerous challenges experienced including lack of very essential medicines and medical supplies.

Funding for medicines is publicly done to the tune of more than 70% in many developed countries while in low and middle income countries like Kenya, public expenditure on medicines does not meet the cost of essential medicines. Out of the pocket spending by patients is done for 50-90% of medicines in these countries [6]. Funds for health care are mainly from households (35.9%), donors (31%) and government (29.3%) [7]. Kenya has had a downward trend in terms of expenditure on medicines in the recent past. For instance, the government expenditure as a proportion of the total government expenditure was at 8.6% (highest ever) in 2001/2002 financial year while in 2009, it reduced to 4.6% [8].

In Kenya, the expenditure on medicines is about 1.65% of the country's GDP. This translates to about 36.6% of the total health sector expenditure. The government's expenditure on pharmaceuticals accounts for about 9.03% of the total expenditure on medicines [9].

KEMSA, which was the main supplier of medicines to public health facilities pre devolution era, has reported budgetary constraints as a major factor contributing to stock outs of essential medicines at their warehouse. For instance, it was only able to procure about 117 items out of the 343 items on its Essential Drugs List due to limited funds [10]. During this period, KEMSA could supply medicines to public health facilities on quarterly basis. The health facilities were required to make orders to KEMSA using prescribed ordering forms, ensuring that the total value of the orders is within the limits of the allocated drawing rights. However, due to stock out challenges at KEMSA, not every item on the orders was supplied [11].

After enactment of the current constitution in 2010, 47 counties were created. As a result, health sector was devolved, leaving the national government with functions of policy formulation, training and regulation. All other aspects of health care were devolved to the counties including procurement of medicines. The funds for these purposes are sent to the counties by the national treasury. The counties are then at their discretion to source for medicines from any source and not necessarily from KEMSA which has been left to mainly handle donor funded medicines such as ARVs, anti TBs, anti malarial medicines and those for family planning [12].

II. MATERIALS AND METHODS

The study was conducted in Bungoma County is one of the 47 counties in Kenya, located in the former western province. It has a population of about 1.8 million with nine sub counties, each with a sub county hospital.

It study design adopted was descriptive cross sectional design as involves describing, recording, analyzing and reporting as they exist, thereby being critical when obtaining specific details on a given phenomena while drawing valid and applicable conclusions.. This design method is very useful when data collection is intended to be done at one point from a given sample. Cross sectional design is important when collecting data over a shorter period of time from a sample [13].

The study targeted the medical superintendents, health administrative officers, pharmacists and procurement personnel of public health facilities in Bungoma County, the head of county procurement department, the county pharmacist and the chief officer in charge of health and sanitation department. This was

Demographic characteristics of the respondents

informed by the fact that these officers are involved in management of medicines. All these officers in their respective sub county hospitals and at the county level participated as samples in the study owing to the small sample size and the unique nature of the study as a result, four officers: medical superintendent, hospital health administrative officer, pharmacist and procurement officer in each of the nine sub county hospitals were sampled hence a total of 36 respondents. At the county level, the county pharmacist, county procurement officer and chief officer- health & sanitation participated in the study, bringing the total sample to 39.

Sampling was by census method as the entire study population was small. The above officers were visited in their respective work places and data collected from them using appropriate tools. Only the 9 sub county hospitals participated in the study as they have better structures for medicines management than health centers and dispensaries, hence meeting the desired objectives of this study.

Data collection was by use of semi-structured questionnaires, interview guides, and a checklist. Questionnaires were used as they provide responses to complex research questions. They also easy to use and are relatively cost effective hence their popularity. Data generated from questionnaires are generally objective [14]. Both open ended and closed ended questions were used in the questionnaires. In depth interviews were used as they offer responses that are of high quality as the interviewer is present to question, cross-examine and probe the interviewee [13]. They were used to collect data from the county officials. Lastly, a checklist adopted from the Bungoma County Essential Medicines Standard Order Form, Version 1 July 2016/17 for sub county hospitals was used to collect information concerning availability of medicines in hospitals. These tools were pretested in a neighboring, Kakamega which has several similarities with Bungoma.

Qualitative and quantitative methods were applied in data analysis. Quantitative data, after cleaning and coding, was entered into the computer statistical package (SPSS version 22.0) for analysis. Descriptive statistics were used to produce percentages and means. Chi square was applied to test for the association between variables. Data was then presented in tables.

For qualitative data, it was tape recorded, translated, transcribed and categorized into specific themes and reported in narrative form.

Appropriate ethical approvals were sought from relevant institutions. Data was password protected to prevent access by unauthorized personnel.

III. RESULTS

Table 1: Demographic characteristics of the respondents

Characteristic	Frequency	Percent
Gender Male	26	81.3
Female	6	18.8
Cadre Medical officers	7	21.9
Pharmacists	8	25.0
Hospital administrative officers	13	40.6
Procurement officers	4	12.5
Work experience (years) 0-5	14	43.8
6-10	3	9.4
11-15	4	12.5
16-20	5	15.6
21-25	3	9.4
Above 25	3	9.4
Total	32	100

A total of thirty six (36) questionnaires were prepared, however, only thirty two (32) respondents could be reached, signifying a response rate of 88.89%. Out of these, 26 (81.2%) were male while 6 (18.8%) were female.

The distribution of the 32 respondents by cadre is also shown in the table above. The largest number of them was hospital administrative officers constituting, 40.6% while the least number was that of procurement officers who comprised of 12.5%. Pharmacists exceeded medical officers by only one respondent.

As it regards the respondents' work experiences, a majority of them had worked for a period of less than five years. They were 43.8% of all respondents. The least percentage had work experiences of between 6 to 10 years, 21 to 25 years and above 25 years, all contributing to 9.4% each.

Estimated budgetary allocation

The estimated budgetary allocation for the health department in the county was about Kshs 2.6 Billion, constituting about 20 percent of the entire county budget. The challenge bit was that out of this, only about Kshs 120 million (4.62%) is allocated for medicines procurement. The rest is allocated to payment of salaries for health workers.

Estimated budget deficit

Table 2   Estimated budget deficit

Percentage budget deficit (%)	Frequency	Percent	Cumulative Percent
0-10	0	0	0
11-20	0	0	0
20-30	4	12.5	12.5
31-40	17	53.1	65.6
41-50	10	31.3	96.9
51-60	1	3.1	100.0
Total	32	100.0	

The highest percentage budget deficit for the allocation made towards purchase of medicines was between 31 to 40 per cent which was reported by 53.1% of the respondents while the least was between 51 and 60 percent having been reported by 3.1% of respondents. A significant number of respondents (31.3%) indicated that their estimated budgetary deficit was between 41-50%. None of the respondents had a budgetary deficiency of less than 20%.

Relationship between inadequate funding as a reason for stock outs and allocation of funds as per quantification needs as a solution to this problem

A majority (85.7%) of respondents who strongly agreed that inadequate funding was an issue leading to stock outs of medicines in their respective health facilities cited that it was extremely important to have allocation of funds for procurement of medicines based on quantification requirements. This represents 52.2% of respondents who strongly agreed with the fact that allocation of funds be made as per quantification requirements. Another 66.7% of respondents who agreed that inadequate funding was an issue leading to stock outs felt that it was extremely important to have allocation of funds for procurement of medicines based on quantification requirements. Only a small percentage of respondents (3.1%) reported that it was extremely not important to have procurement funds allocated as per quantification needs although at the same time, agreed that inadequate funding was an issue contributing to stock outs. There was therefore a strong relationship between inadequate funding and allocating funds for procuring of medicines based on quantification.

Table 3: Inadequate funding as a reason for stock outs and allocation of funds for medicine as per quantification requirements as a remedy

		Allocation of funds for medicines procurement as per quantification requirements			Total
		Extremely not important	Important	Extremely important	
Inadequate funding	Strongly Disagree	0	1	0	1
	Don't know	0	1	1	2
	Agree	1	4	10	15
	Strongly agree	0	2	12	14
Total		1	8	23	32

Inadequate funding as a reason for stock outs of medicines

Table 4: Inadequate funding and stock outs of medicines

	Frequency	Percent	Cumulative Percent
Strongly Disagree	1	3.1	3.1
Don't know	2	6.3	9.4
Agree	15	46.9	56.3
Strongly agree	14	43.8	100.0
Total	32	100.0	

Generally, most respondents agreed that inadequate funding was the main issue leading to stock out of medicines in their health facilities. Out of all respondents, 43.8% strongly agreed to this statement while 46.9% plainly agreed. Only 3.1% strongly disagreed while 6.3% didn't know.

Table 5: General concerns relating to healthcare financing and medicines financing in particular and how they can be addressed

Concern	How they can be addressed
Very little allocation to medicines procurement	Allocate funds for procurement of medicines as per quantification requirements
Lack of rational budgeting where health department is under allocated	Prioritize health docket when it comes to budgeting.

IV. DISCUSSION

Inadequate health care funding is one of the major factors affecting availability of medicines. It is evident that a majority of the world's population- up to a third have no access to essential medicines [2]. The essential medicines concept was started by the World Health Organization (WHO) in 1977 and the idea was that a majority of the population will be able to access medicines they so much require. However, this is yet to be realized particularly in developing countries like Kenya due to inadequate budgetary allocation for healthcare hence budgetary constraints [10].

A majority of the respondent were health administrative officers while the least number was for procurement officers. Pharmacists only exceeded medical officers by one. The high number of health administrative officers could be due to the fact that they are involved in the day to day administrative activities of hospitals, making their presence to be required throughout. On the other hand, medical officers and pharmacists offer highly specialized care and thus many could not be reached on the day and time the researcher visited their hospitals as they could have been possibly attending to patients. Lastly, procurement officers were only four since not all hospitals in the county are procurement entities. The officers were therefore deployed to just a few hospitals which are also procurement entities as per the counties procurement regulations.

Respondents' work experience was skewed towards 0-5 years, signifying that they were newly employed and hence only worked for a shorter period of time. The number of years one has worked in a given field should always be considered the experience gained [15]. This is because competencies are acquired over time, thus those who have worked for a shorter period will be expected not to have similar competencies like those who have worked for longer.

Bungoma County's estimated allocation towards health sector was about Kshs 2.6 Billion, this translates to about 20 percent of the entire county budget. Comparing this to the 15% of the total budget as per the Abuja declaration (2001), it appears to be higher. However, a huge junk of this goes towards payment of salaries for health workers and other developmental projects. The amount left for medicines procurement is about Kshs 120 million (4.62% of the health budget). This is way too low compared to the then national government's allocation for procurement of medicines which was 36.64 % of the total health expenditure [9]. This percentage is also lower than what Webuye county referral hospital, which is one of the hospitals in Bungoma County allocated for medicines in 2012/2013 financial year. This is according to a study by Lucy Mecca which indicated that the hospital allocated an average of 9.12% for medicines out of their Facility Improvement Funds (FIF) in this particular period [16]. With the low budgetary allocation above, more than half (53.1%) of respondents indicated that they had a budgetary deficit of between 31 to 40%. This is a wide budgetary gap that accounts for the frequent stock counts of essential medicines in public health facilities. KEMSA, which is the government's entity responsible for supply of medicines and medical supplies in public health facilities, has had similar budgetary constraints. It was therefore unable to procure most of the items on its Essential Drug List (EDL). Out of the 343 items, it only procured 117 items (34.1%) [10].

From the findings of this study, there exists a strong relationship between inadequate funding and allocating funds for procuring medicines based on quantification. A majority of the respondents (43.8%) strongly agreed that inadequate funding was a key factor leading to stock outs of essential medicines in public facilities while another 46.9 plainly agreed. This compares well with a study by Mwathi and Osuga which found out that there was a significant relationship between funding and availability of medicines. Inadequate funding was the most strongly cited (57.9%) factor that caused unavailability of essential medicines in public hospitals [17]. Funding is very necessary in acquiring any property and therefore lack of it means acquisition of the said property will not be possible. Findings of this study are also similar to other studies for instance by Elliot (2008) and MOMs/ MOPHs (2009) which pointed out that inadequate funding among other factors such as expiry, high prices and pilferage affects accessibility to medicines [3,18].

In general, major challenges relating to health care financing include allocation of very little funds for procurement of medicines and irrational budgeting where health sector is underfunded.

V. CONCLUSION

This study revealed that there is a very significant relationship between healthcare funding and availability of medicines. Inadequate healthcare funding was identified as a main determinant of availability of medicines hence a factor leading to frequent stock outs. This challenge should therefore be addressed with urgency since it has direct effects on health care which is so much dependent on health commodities and technologies. The county governments need to realign their priorities to factor in adequate budgetary allocation for health sector in line with global standards.

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