RESOURCE ALLOCATION TO HEALTH SECTOR AT THE COUNTY LEVEL AND

IMPLICATIONS FOR EQUITY, A CASE STUDY OF BARINGO COUNTY.

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DECLARATION

I, MOSES OMONDI OTIENO declare that this research project is my original work and to the best of my knowledge has not been presented in any institution or university for academic purpose(s).

Signed   _____Date   _____

MOSES OMONDI OTIENO

X53/68153/2013

This research project has been submitted with our approval as the University Supervisors.

Signed   _____Date   _____

DR. M. K. MURIITHI

Signed   _____Date   _____

DR. J. CHUMA

DEDICATION

This research is dedicated to my late brother, Dr. Ouma Otieno M. A. E. You lived your life for

us. Rest in peace, Emobo Kapiyo; Rest in peace, "Ratego Nyakwar Olum."

ACKNOWLEDGEMENT

LIST OF ABBREVIATIONS

ANC   - Antenatal Care

CEOs   - Chief Executive Officers

C D F   - Constituency Development Fund

CHMTs   - County Health Management Teams

C O   - Clinical Officer

CRA   - Commission on Revenue Allocation

DANIDA   - Royal Danish Embassy

DH   - Department of Health

DHSS   - Department of Health and Social Sciences

FGD   - Focused Group Discussion

F I   - Fully Immunized

F P   - Family Planning

GHS   - Ghana Health Service

HCHS   - Hospital and Community Health Services

HFA   - Health for All

HIMS   - Health Information Management System

HSICF   - Health Sector Intergovernmental Consultative Forum

HSSF   - Health Sector Service Fund

KEMSA   - Kenya Medical Supplies Agency

KEMRI   - Kenya Medical Research Institute

KMTC   - Kenya Medical Training College

LAOs   - Local Administrative Organizations

MCAs   - Members of County Assemblies

MDGs   - Millennium Development Goals

MOH   - Ministry of Health

MOMS   - Ministry of Medical Services

MOPHS   - Ministry of Public Health and Sanitation

MTEF   - Medium Term Expenditure Framework

NHIF   - National Health Insurance Fund

OPD   - Outpatient Department

PHC   - Primary Health Care

PMS   - Personal Medical Services

RAWP   - Resource Allocation Working Party

SCMOH   - Sub-County Medical Officer of Health

WHO   - World Health Organization

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ABSTRACT

According to Bigambo (2014), the issue of equitable resource allocation is one of the perennial problems which has not only defied all past attempts at permanent solution, but has also evoked high emotions on the part of all concerned. In many low income countries, budget allocation patterns ignore changes overtime in health care needs like population size and disease patterns restricting the ability of health care services to respond to these changes which are in turn heavily influenced by existing health service supply patterns.

Due to this, geographical regions that have previously received large amounts of resources continue to benefit from these resources regardless of whether there is a need to justify their need. On the other hand, regions that may have required a low amount of resources in the past, and which may require a large amount of resources now due to changes in their demographics and disease patterns receive the same amount of resources which can't meet the current needs of the population. The overriding concern is that sections of the population in the same areas are prejudiced in their access to essential health care merely by virtue of their place of residence (McIntyre et al 1990).

Therefore the main objective of the study is to evaluate the process of resource allocation to the health sector in Baringo County and its implication to equity. The study was conducted in Baringo County which is allocated in the North Rift, part of former Rift-Valley province, Kenya. It has six sub-counties namely: Baringo North, Baringo Central, Koibatek, Marigat, Mogotio and East Pokot. This is a descriptive study that employs both qualitative and quantitative research methods. Qualitative data includes: in-depth interviews of key officials in health and finance departments and Focused Group Discussion (FGD) for the health care providers.

The target population for this study included: county/sub-county health department administrators, finance department administrators and health care providers.
One chief health officer, one chief finance officer, one director of health services and six SCMOH or their representatives participated in the study while a total of twenty two health care providers (in-charges of dispensaries and health centres) participated in the FGD. Data was collected using semi-structured interview questions, audio recorder and notes. Quantitative data was analyzed using excel while qualitative data was analyzed manually and data presented using tables, pie-charts, bar graphs and verbatim quotes.

Results and findings were: the average utilization rate of the health services in Baringo county was 1.30 per capita/year which was below the national average rate of 3.1 per capita/year; public finance act of 2012 was followed in the budget making process but there was no criteria or formula for financial resource allocation; there was skewed distribution of the human resources with some sub counties being 'favoured" while others were "disadvantaged" and finally there was evident of political interference with the distribution of the health resources.

In conclusion there was significant disparity on the allocation/distribution of the health resources across the sub-counties. This calls for immediate redistribution of the available health resources as a short term measure while formulating and using a need-based resources allocation formula as a medium term and a long term measure.

CHAPTER ONE

INTRODUCTION

1.1 Background

Resource allocation refers to the process of distributing health care resources from a central (provincial or regional) level to more peripheral level (Green, 1992). On the other hand equity is concerned with differences among groups that are unnecessary, avoidable, unfair and unjust (Whitehead, 1992). Most countries world over have made health as a right to their respective citizens. While high and some middle income countries have made this a reality by providing universal health coverage to all, most low income countries still have enormous challenges and barriers towards achieving quality health care for all. Part of this challenge is inequitable resource allocation towards health care across geographic and socioeconomic levels. This is to say that the people who need healthcare most have the greatest difficulty in accessing health services and are least likely to have their health met (Balarajan et al, 2011). Evidence from literature has also shown that people who are disadvantaged, either socioeconomically or by place of residence (e.g. remote rural areas) suffer a higher burden of illness, have higher mortality rates and are least considered in resource allocation decisions (Ohene, 1997).

In order to reduce inequality in health sector, there is need to ensure an improved access to health care services for the "disadvantaged" groups. One way of trying to achieve this is by allocating resources in a more equitable manner and in such a way that each individual has access to basic health services regardless of his/her socioeconomic status, being able to pay for the health service or place of residence. It is this reason that prompted member nations of World Health Organization (WHO) in 1978 at Alma Ata where they made and adopted a declaration that was

known as "Health For All (HFA)". The goal of HFA was to attain a level of health care guaranteeing all citizens of the world to live socially and economically productive lives. This goal was to be met through Primary Health Care (PHC) which comprised of five principles: equitable distribution of health resources, manpower development, community participation, appropriate technology and multi-sectoral approach (Basavanthappa, 2003).

Further, in 2001, African Union countries heads of state met in Abuja, Nigeria where all pledged to set a target of at least 15% of their annual budget to the health sector. The head of states also urged the donor countries to fulfill their promise of development assistance to developing countries (WHO, 2010). This was to pay attention to the shortage of resources necessary in improving health in low income countries. Subsequently, in 2008, there was yet another declaration in Ouagadougou on PHC and health systems in Africa with the objective of reviewing past experiences on PHC and redefining strategic directions. This was to scale up essential health interventions so as to achieve health related Millennium Development Goals (MDGs). It was to be achieved using PHC approach of strengthening health systems through renewed commitment of all African countries. Part of the guiding principles to this declaration was: adequate resource allocation and reallocation, intersectoral collaboration, decentralization, equity and sustainable universal access, and mutual accountability for results (Barry et al, 2010).

However, in most countries, allocation of existing resources has not been looked at as a means to achieving equity in health and health care but rather great emphasis has been put into raising additional revenue which can be diverted to the poor regions. As a result a little effort has been put into considering how a better allocation process can help improve health care in

"disadvantaged" regions. While one can't ignore the fact that additional resources are required for the health sector to provide better services, it is common to find that a large percentage of the resources available to the health sector rarely serve the purpose of service delivery. Achieving equity and efficiency require more than just allocating or requesting additional funds. Instead, it requires first an achievement of equity by re-allocating the available resources before the health sector demands for additional revenue as a means of achieving equity.

Another aspect of trying to achieve equity in health care is through health system structure and how the health care and related services are organized. This varies from country to country based on their systems of governance. Most countries have adopted decentralization or devolution of health services as a means of improving health equity and equality. In these countries, equitable allocation of health resources is still key, however, processes of arriving to that equity varies with some countries still using incrementalism approach while others have developed a revenue allocation formula. Discussed in the subsequent paragraphs are the processes used by various countries (both in high, middle and low income economies) to allocate health resources within their various health system structure to improve on health equity.

In United Kingdom, Resource Allocation Working Party (RAWP) reviewed its resource allocation formula (the first need based formula to be developed) to have an equity principle with the objective of allocating resources to local areas so that there would be eventually equal opportunity of accessing health care for people at equal risk. This principle has stood the test of time and remains the fundamental objective of health resource allocation in England today (Buck and Dixon, 2013).

In Pakistan, health services are devolved both to the provinces and then to the districts. Within Balochistan (a province which is one of the devolved units), there was an agreement on the general criteria of choosing an allocating system to districts. It considered impact on equity, efficiency; transparency; feasibility including data availability, technical capacity to operate, ability to reduce over capacity where appropriate and consistency with other government systems and flexibility to allow medium to long term refinement (Green et al, 2000).

Resource allocation in Brazil which is a federal state was generally incremental but later based solely on the existing supply of services where there was reimbursement for what outpatient and inpatient services provided. These were concentrated in those geographical areas where the population was in higher socio-economic groups and had better health. As a result this resource allocation only served to make the situation yet more inequitable, as it overlooked criteria that might have resulted in offsetting or narrowing existing inequalities. This changed for better where some key innovations effectively implemented and still operating includes: the establishment of per capita payment for each geographical area to cover primary care, the creation of financial incentives for the development of special primary care programmes and introduction of caps on expenditure for higher levels of complexity of care (Porto et al., 2007).

In Punjab state, a concept of performance based equitable resources allocation in line with a needs index was developed. The concept was to have a financial reward system that allocates resources to the devolved units based on the local needs while simultaneously rewarding them for improvements in health performance. In this concept, resource allocation to districts is divided into base allocation and performance components. To define the needs index, four

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attributes of the health system for each districts are assessed and given a weight by the state. The weights chosen reflect an equity dimension (social deprivation and mortality) as well as factoring in unit costs (actual number of facilities and rural persons). The weight determines the amount of funds distributed to a district and results in a more equitable and needs based allocation of funds across districts. For instance, changes in the number of health facilities will have four times greater impact on the total funds a district receives than changes in the maternity and child mortality index (Mahmood et al, 2013).

According to Sikika (2012), Tanzania commissioned an independent consultant to develop a resource allocation mechanism in 2002. This was to promote equitable allocation of resources. The outcome of this process was a formula which determined how financial resources should be distributed. A need-based criterion with four differently weighted factors developed. The factors were: population (70%), percentage of people living below the basic poverty line (10%), district medical vehicle route (10%), and under-five-mortality (10%). These factors and weights were selected on the basis of their importance in determining the quality of health in every district. In particular, 'population' was chosen since citizens are the main recipients of the health services. The three other factors were considered to serve special needs.

Kenyan resource allocation has been incremental over the years. This resulted in regional and sectoral disparities since independence in 1963 (Briscombe et al, 2010). Later a forwarding budgeting system and Medium Term Expenditure Framework (MTEF) approach to budgeting along with poverty reduction strategic planning were introduced. Despite all these, Kenyan budget process is largely devoid of needs based criteria (Briscombe et al, 2010). For the last five

decades, the allocation of financial resources to the health sector has remained highly centralized and opaque, relying primarily on previous year's budget allocation rather than on needs' indicators (Briscombe et al, 2010). There has also been mal-distribution of available health personnel, with some rural dispensaries left unstaffed (MOMS and MOPHS, 2010).

According to Kenya Health Sector Strategic & Investment Plan (2012-2018), the current health staff in Kenya meets only 17% of minimum number needed for effective operation of the health system. It further notes that Kenya has only 7 nurses per 4,000 residents. This is just half the number (14 per 4,000) recommended by the World Bank. Subsequently, these health workers are unevenly distributed across the country, with particular gaps in the North Eastern and Northern Rift provinces (MOH, 2014). This means that distribution of workforce tends to favour regions perceived to have high socioeconomic development, leaving marginalized and hard to reach areas at a disadvantage (MOH, 2014). This is because of lack of application of appropriate health personnel deployment norms and standards. It went further to note that poor and rural areas (where 70% of the population lives) have fewer health facilities and are not preferred by health workers, while other regions report surpluses in staff (MOH, 2014).

If we want to allocate resources proportionate to the greater morbidity among the poor and at the same time reduce the social inequalities in health, we have to look more closely at the vertical aspects of equity, i.e. the unequal treatment of un-equals (McIntyre and Gilson, 2000). This is to mean, deprived groups should receive preferential allocation of health care resources to achieve more rapid improvements in their health so as to reduce inequalities in their health vis-à-vis richer groups.

Kenya was one of the African countries that signed the 2000 Abuja declaration to allocate at-least 15% of public spending to the health sector. However, this has never been achieved and Kenya's health sector budget has never risen above 10% of total public health spending (Briscombe et al, 2010). Table 1 and Figure 1 show the ministry of health share of the national budget for the fiscal year 2001/2002 up to 2009/2010.

Table 1: Overview of Kenya's health budget, FY2001/02 to FY2009/10

BUDGET	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2009/10
Total Gross Health Budget (US$ Million)	335		317	332	385	437	543	442
MOH Health Expenditure per capita ((US$ Million)		9.1	9.4	9.6	10.8	11.9	15.6	
MOH share of GoK Budget (Percent)	8	8.3	7	6.1	5.7	7.6	6.4	4.6

Source: Health Policy Initiative analysis of Ministry of Medical Services' data, 2008 & Kenya National Health Accounts 2009/10.

Figure 1: Ministry of Health Share of the National Budget.
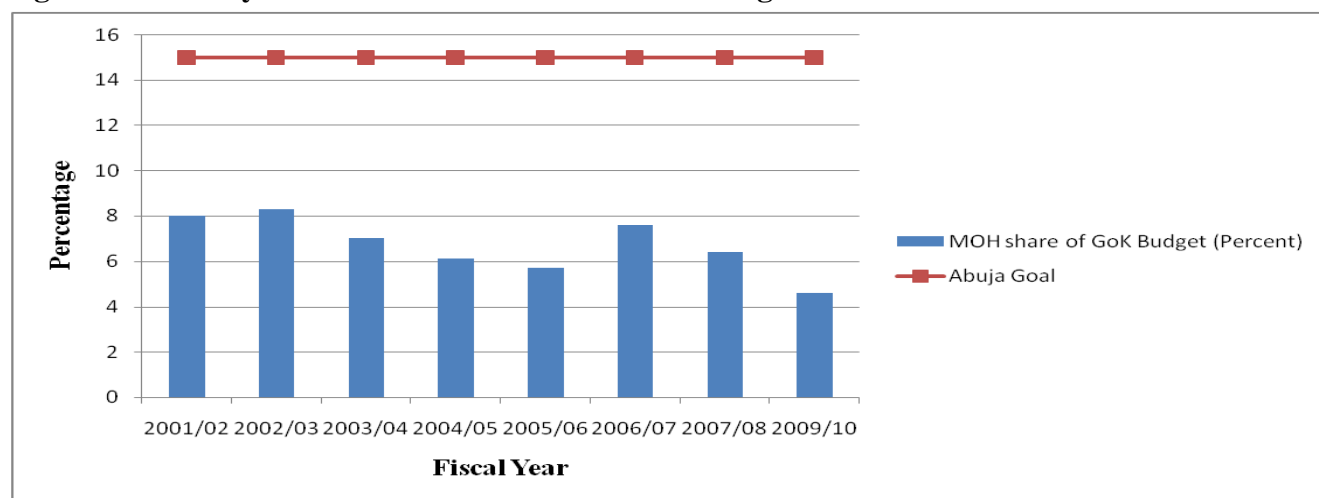
Source: Adopted from table 1.

1.1.1 Devolution and Organization of Health Care System in Kenya

Kenya has evolved from centralized system of governance to a devolved health care system where most health services (offered at community, dispensary, health centre and county referral hospital levels) are devolved to county governments. The new constitution created fourty seven (47) counties and one (1) national government. Article 6 (2) states that the national and county governments are distinct and interdependent and shall conduct their mutual relations through consultation and cooperation. This means that Kenya chose a cooperative system of devolved government and not a system which emphasizes on autonomy like Ethiopia, United States and to some extent Nigeria (KPMG, 2013). The role of a Ministry of Health is therefore likely to be one of "stewardship" and "guidance" instead of "own and control" in other devolved systems.

The Kenyan constitution of 2010 further provides an extensive legal framework that ensures a comprehensive rights-based approach to health service delivery. The constitution provides for a right to health including reproductive health to every person under article 43. It further states that no one can be denied an emergency medical treatment and the State is obligated to provide appropriate social security to persons who are unable to support themselves and their dependants. The Constitution further obligates the State and every State organ to observe, respect, protect, promote, and fulfill the rights in the constitution and to take legislative, policy and other measures, including setting of standards to achieve the progressive realization of the rights guaranteed in Article 43. State organ and public officers also have a constitutional obligation to address the needs of the vulnerable groups in society (for example members of minority and marginalized communities). Subsequently, the State is obligated under Article 46 of the constitution to protect consumer rights, including the protection of health, safety, and economic

interests. Health sector in general should therefore implement the principles in Articles 10 and 232, Chapters 6 and 12 of the constitution, among others and establish the framework necessary to support their implementation (Government of Kenya, 2010).

In the devolved system, health functions are shared between the national and the county governments. However, consultation and cooperation remain key between the two levels of governance. The functions of the national ministry on health are: health policy; financing; national referral hospitals; quality assurance and standards; health information, communication and technology; national public health laboratories; public private partnerships; monitoring and evaluation; planning and budgeting for national health services; services provided by Kenya Medical Supplies Agency (KEMSA), National Hospital Insurance Fund (NHIF), Kenya Medical Training College (KMTC) and Kenya Medical Research Institute (KEMRI); ports, boarders and trans boundary areas and major disease control (malaria, TB, leprosy etc). Subsequently, the functions of the county department of health are: county health facilities and pharmacies; ambulance services; promotion of primary health care; licensing and control of agencies that sell food for the public; disease surveillance and response; veterinary services (excluding regulation of veterinary professionals); cemeteries, funeral homes, crematoria, refuse dumps and solid waste disposal; control of drugs of abuse and pornography; disaster management and public health and sanitation (KPMG, 2013; MOH 2014).

Healthcare is organized in a four tiered system, that is, community health care services, primary care services, county referral services and national referral services. Community health services comprise of all community based demand creation activities i.e. identification of cases that need

to be managed at a higher level of care in the health sector. Primary care services are comprised of all dispensaries, health centres and maternity homes for both public and private providers. County referral services comprise of both public and private hospitals operating in and managed by a given county and comprise of the former level 4 (district hospitals) and level 5 (provincial hospitals). Currently the public county referral services are called sub-county and county hospitals. Lastly, the national referral services comprise of facilities that provide highly specialized services and include all tertiary referral facilities (KPMG, 2013).

This means that the counties are responsible for the first three levels of care: community health services, primary care services and county referral services while the national government is responsible for national referral services. However, the national and county governments, though distinct, shall conduct their mutual relations on the basis of consultation and cooperation. This requirement led to the establishment of the Health Sector Intergovernmental Consultative Forum (HSICF) established in August 2013. The consultative forum provides a platform for dialogue on health system issues that are of mutual interest to the national and county governments. The forum, therefore, seeks to ensure that health services remain uninterrupted, while maintaining the focus on delivering the constitutional guarantee of right to health for all Kenyans (MOH, 2014).

At county level, there is county health department whose role is to create and provide an enabling institutional and management structure that is responsible for coordinating and managing the delivery of healthcare services in the county. In addition to the county health departments, there are also County Health Management Teams (CHMTs) that provide

professional and technical management structures in each county to coordinate the delivery of health services through the available health facilities in a county.

1.1.2 Resource Allocation in Kenya after Devolution

After devolution took effect in Kenya, resource allocation process changed to cater for the devolved units of fourty seven (47) counties whereby most of the health services were devolved. County Allocation Revenue Act of 2014 (Kenya Gazette, 2014) provides for an equitable allocation of national revenue among the county governments. The same act also specifies that at-least 15% of the national revenue to be shared to the county governments. Currently this is done using a formula (proposed by the Commission on Revenue Allocation, CRA, and adopted by the Senate). The formula comprises of five criteria: population (45%), basic equity share (25%), poverty index (20%), land area (8%) and fiscal responsibility (2%). This implies that counties with large populations, high poverty index and larger land area will receive more of the revenue. All the counties shall have equal share of the basic equity share (cost of running local governments) and fiscal responsibility. Thus 73% of the revenue is shared unequally (vertical equity) while 27% is shared equally (horizontal equity). In addition to the equitable allocation, there is also the revenue equalization fund which goes to "marginalized" counties. The county governments have also ability to borrow and to receive grants both from national and international governments.

The CRA has no control on intra-county resources allocation. The counties are therefore autonomous to make their own budget then forward the budget to the national budgetary control commission for approval where the commission shall only scrutinize the budget for justification

of the items listed and the amount allocated to each item or function. It is therefore at the discretion of a county government to allocate resources to its health sector and using its own criteria, process or formula. There is little, if any, literature on how resources (especially finances and human resource) are allocated to health services in the counties. It is perceived that need for health care and health services are rarely observed when it comes to resource allocation at the county level.

In addition to the sharing of the national revenue (part of which goes to the health sector), county health services are also funded directly from the national government and the donors. This is partly because of the shared health functions between the national and the county governments. There is also Health Sector Services Fund (HSSF) which was proposed in 2010 as a form of health care financing in Kenya. This was a scheme established by the national government to disburse funds directly (currently through the county) to public health facilities i.e. health centres and dispensaries to improve health service delivery to the local communities. The scheme was to give local facilities autonomy to manage their resources and empowering the communities to participate in health care delivery (MOPHS, 2010; Goodman et al., 2013; Waweru et al., 2013). Currently, HSSF comprises of reimbursement of free maternal services, users fee refund, equity share and County Health Management Teams (CHMTs) funds for support supervision. HSSF sources include the Ministry of Health and donor funding through World Bank and DANIDA. In general, devolution of health services in Kenya is just two years old and it is perceived that the two levels of governments still grapple with budgetary approaches to ensure that the scarce resources are equitably allocated to health sector.

The total health budget allocation by the national government for the fiscal year 2013/2014 was KShs. 34.7 billion compared to KShs. 55.1 billion in the previous financial year 2012/2013. According to Institute of Economic affairs (2013), the difference is explained by the devolution of health services and sharing of management of facilities between the national and county governments.

In 2013/2014, Baringo County had a proposed total budget of 4. 788 Billion (CRA, 2013). Out of this only 195, 700 Million (4.09%) was directly allocated to health (CRA, 2013). However, there were some amount allocated to personnel (CRA, 2013) which was not defined and they may include health care workers, therefore it cannot be concluded that only 4.09% of the budget was allocated to health. In addition to this fund, Baringo county health facilities and the CHMT received funds from HSSF in the same year. The major concern is that there was little information, if any, on the process or criteria used to arrive at the health budget and/or allocation of financial resources in the health sector within the county.

1.1.3 Lessons Learned from other countries

This section describes what lessons can be learnt from other countries that have used devolution as a means to strengthen their health service delivery. The countries include Ethiopia, Ghana and Thailand. For each of these countries, background of devolution and how it has impacted on their health systems is discussed, then general strengths and weaknesses of the devolution mechanism is elaborated especially on resource allocation and health care equity.

In Ethiopia, devolution concept was introduced in 1996 and seen as the primary strategy to improve health service delivery. It formed part of a broader devolution strategy across different sectors of which healthcare was one the services devolved. Devolution first took place at regional level and was further extended to the district or Woreda level in 2002. Through devolution, a four-tiered system of care facilities was created, that is, national referral, regional referral and district hospitals and, lastly, primary healthcare facilities. The devolution mechanism entailed districts receiving block grants from regional government. The districts were in turn entitled to set their own priorities and determine further budget allocation to the healthcare facilities within their locations based on local needs. The district levels are therefore responsible for human resource management, health facility construction and supply chain processes (KPMG, 2013).

For Ethiopia, it should be noted that the block grants are based on the size of the population and not necessarily on the need of the population. This can lead to mis-informed priorities in allocation of health resources since the size of the population does not necessarily translates to greater and urgent need of the health care service. The advantage with the devolution of health care in Ethiopia was that other sectors were devolved as well thus increasing the managerial capacity due to spill over and learning effects across sectors. Subsequently, by gradually implementing its devolution mechanism through first devolving responsibilities to regional level before further devolving it to district level, Ethiopia created a platform for managerial capacities to evolve within these regions and districts (KMPG, 2013).

Decentralization, a form of devolution, has played a pivotal role in government policy ever since Ghana became an independent country. Following the 1993 Local Government Act, the District Assemblies' responsibilities were limited to activities in the field of public health (e.g. health promotion and disease surveillance and control). The Ministry of Health delegated the responsibility of managing its facilities to an autonomous entity created in 1996, the Ghana Health Service (GHS). The GHS is responsible for managing and operating most of the country's facilities and offices. The GHS subsequently evolved into a more de-concentrated structure with regional and district health offices. Although both structures are based on the principle of delegation and de-concentration at a district level, there is not one single authority for coordination of health service delivery at a district level (KPMG, 2013). This can create confusion and a lee-way for neglect in the health sector especially on health resources. A desirable lesson for Ghana is that the devolution is a multi-sectoral approach thus increasing managerial capacities, which all sectors benefit from.

In Thailand, through the implementation of the Local Administrative Organizations (LAOs) Act in 1999, a target was set for transferring a significant share of national budgets to LAOs. The minimum share of budget to be transferred was 25 percent, with a target of 35 percent. The Act impacted on several sectors, including healthcare. Devolution of health services mainly focused on primary health centres and the transition of ownership from the Ministry of Health to the LAOs. Before devolution, health centres had little autonomy and, through the aforementioned act and guidelines developed by the Ministry of Health, the health centres were given the option to either perform services under the flag of the Ministry of Health or to devolve to the LAO-level. However, devolution of health centres only occurs if two conditions are met. First, the LAO must

have received a good governance award demonstrating that it is capable of managing the health centre. Part of this also implies that sufficient funds are earmarked by the LAO for health promotion initiatives. Second, at least half of the health centre's staff involved needed to be willing to transfer to LAO employment. Devolution in the Thailand primary healthcare environment thus means that the LAO becomes responsible for primary health service delivery through health centres. This implies that day-to-day operational responsibility, including financial and human resource management, have become the responsibility of the LAO. However, the Ministry of Health continues to be responsible for technical policy, supervision, training and regulation of health professionals (KPMG, 2013).

This kind of devolution approach exposed Thailand to a growth in political influence because health centres moved closer to the centre of political decision making. There seemed to be a relationship between those health centre heads that were closer to the LAOs' Chief Executive officers (CEOs) and the funds these health centres received. This had a negative effect on those health staff still deciding on their vote to devolve their health centre, i.e. to transfer their employment contract from the Ministry of Health to the LAO level. Another, undesirable scenario occurring in Thailand is one in which the MOH retains its county offices under its hierarchy but this office loses most of its functions. The county then has to build capacity from a zero base while all the best available candidates at the MOH office stay in post. In Thailand, therefore, there has been a very modest amount of voluntary spontaneous moves of MOH staff into local government jobs – applying for vacancies as they are advertised (KPMG, 2013).

Research has shown that managerial capacity is a prerequisite for devolution to achieve its goals. In all the three countries included in the analysis above, it was found that those regions or districts with strong management capacity in general would lead to stronger performance results. Another lesson learnt from all three countries is that national governments still have strong say into what budgets are allocated to what region or district, including what parameters underpin the size of the budget. This puts constraints on the levels of authority; sub-national entities have to influence the budget, specifically if this is based on population numbers rather than need and demographic factors. The risk of using budgets per region is the insufficient "ring-fencing" of the budget for healthcare. Combined with a lack of managerial capacity, this can lead to underfunding of health service delivery (KPMG, 2013).

1.2 Statement of the Problem

According to Bigambo (2014), the issue of equitable resource allocation is one of the perennial problems which has not only defied all past attempts at permanent solution, but has also evoked high emotions on the part of all concerned. In many low income countries, budget allocation patterns ignore changes overtime in health care needs like population size and disease patterns restricting the ability of health care services to respond to these changes which are in turn heavily influenced by existing health service supply patterns.

Due to this, geographical regions that have previously received large amounts of resources continue to benefit from these resources regardless of whether there is a need to justify their need. On the other hand, regions that may have required a low amount of resources in the past, and which may require a large amount of resources now due to changes in their demographics

and disease patterns receive the same amount of resources which can't meet the current needs of the population. The overriding concern is that sections of the population in the same areas are prejudiced in their access to essential health care merely by virtue of their place of residence (McIntyre et al, 1990).

Baringo county is perceived as one of the poor counties in Kenya, with a poverty index of 57.4% against a national average of 47.2%. Only 11% of its population live in urban areas (KIRA, 2014) while the rest live in mainly rural areas which are considered poor and disadvantaged. The concern therefore is that these populations may be prejudiced merely by their place of residence. It also has one of the worst intra-county disparities in education, sanitation and housing (Ngugi et al, 2013) with an average distance to a health centre of 15km from each home (KIRA, 2014) which could also lead to low utilization and accessibility of health services (MOH, 2015) hence poor health indicators. The county has doctors and nurses to population ratios of 1:278,000 and 1:4,115 respectively compared to the national average of 1: 10,000 and 12: 10,000 respectively (KIRA, 2014; CRA, 2011; MOH, 2014). This is below the WHO recommended average of 21.7 doctors and 228 nurses per 100,000 people; the required standard for optimal delivery of services (MOH, 2014). The health worker to population ratio in this county is likely worsened by unique geographical challenges. Poor telecommunication, infrastructure and security are also likely to contribute to poor health care access and quality. These conditions may further discourage recruitment, attraction, and retention of potential and existing health workers.

In addition, some of the low level health facilities (especially dispensaries and health centres) in this county have only one technical staff who is expected to provide quality services while some

of the facilities lack technical staff and either closed or run by patient attendants or nurse aids. The population served by these overworked and/or poorly trained staff is poor and live in rural areas, further compounding the health inequity.

1.3 Research Questions

The research questions that this study seeks to answer are:

1. What is the current resource allocation and decision making process in Baringo County?
2. How are financial and human resources distributed to the sub-county level and what is the extent of inequity in Baringo County?
3. What are the possible causes of inequities in resource allocation in Baringo County?
4. What would be the most favourable process or formula for resource allocation for Baringo County?

1.4 Study Objectives

1.4.1 Broad Objective

The main objective of the study is to evaluate the process of resource allocation to health sector in Baringo County and its implication to equity.

1.4.2. Specific Objectives

1. To document the current resource allocation and decision making process in Baringo County.
2. To estimate the level and distribution of resources allocated to the sub-counties and assess the extent of inequities in Baringo County.
3. To identify possible causes of inequities in resource allocation in Baringo County.

4. To propose and/or recommend an equitable and needs-based resource allocation formula or process for Baringo County.

1.5 Justification of the study

According to the 2010 Kenya constitution, every Kenyan has a right to the highest attainable standard of health. For this right to be fully enjoyed, adequate resource allocation towards health is imperative. It is equally imperative to find out whether budgetary allocation to health in each and every county is equitable, meets the needs of the population and is at par with the international standard(s). Therefore, an important policy question which health system should address is to understand the extent to which health care benefits is distributed on the basis of need (Chuma et.al, 2012).

The government of Kenya has initiated several reforms whose common goals are to achieve greater efficiency in provision of health services and ensuring access to health services to all citizens regardless of their income and place of residence. These reforms are through health policies that are formulated by the national government and adopted/implemented at the county level. Unless the county governments adopt a "just", "fair" and efficient way of allocating health resources, it is unlikely that these policies will be achieved; thus negating on health equity.

In the devolved system, it is not clear the process used by the county governments for allocation of the available resources to various departments (including health department) and sub-counties. Virtually, there is scanty literature (if any) regarding intra-county resources allocation and its potential influence on health equity. In Baringo County, there are currently no criteria that exist

to ensure equitable distribution of resources in the health sector. It is perceived that allocation of the health resources within the county and through to sub-county levels has only been on the basis of unprecedented requests or intense "lobbying" by the political class and not based on need or priority.

This research therefore seeks to evaluate the process of the resource allocation in Baringo County and analyze its implication to equity. The study shall also attempt to answer the question on the distribution of the health care workers and its effect to equity. It may further propose a recommendation on a more equitable formula which is need based and can be emulated by other counties. Undertaking this study is equally significant and relevant because it is in line with governance policies aimed at reducing inequities in health and health care. It is envisaged that the project will particularly help the county leaders tasked with the responsibility of equitable health resource allocation while addressing the needs of the marginalized groups and areas. Thus, the information generated may contribute to policy changes that may assist in bridging the present inequities in allocation of health care resources.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter reviews a number of past studies both theoretical and empirical that have been conducted touching on resource allocation and its implication to equity. The chapter starts with a review of the theoretical literature, followed by resource allocation based on need as in the Resource Allocation Working Party (RAWP) of England. It then looks at equity within health care, the principles of equity in health and measurement of equity. Finally, it discusses empirical literature and an over view of literature.

2.1 Theoretical Literature

This section discusses various theories relating to the governmental resource allocation and how budgetary allocation needs to be accounted for under the various standards. It also involves equity theory.

2.1.1 Theory of Resource Allocation

The theory of resource allocation argues that resources should be allocated to their most beneficial use where it will be most productive. For example, if in a given scenario there are limited funds for the development of a city, then the resource allocation theory argues that the funds should be allocated to the projects that are of immediate need and priority to the city (Fozzard, 2001).

2.1.2 The theory of Budgetary Allocation

The theory of budgetary allocation contends that during the governmental budget preparations, it is critical to ensure that each and every department is given a chance to participate in the budgetary process so as to ensure that the budget receives adequate support during its implementation. This theory is much relevant to the study at hand since estimation of expenditures by the health department is meant to enhance the participatory feature of the budgetary process (Fozzard, 2001).

2.1.3 Equity Theory

Equity theory on job motivation was developed by John Stacey Adams in 1963. According to Adams, equity does not depend on input to output ratio alone but more so on our comparison between our ratio and the ration of others. One of the important factors in an employer's motivation is whether he/she perceives the reward structure as being fair. Equity theory essentially refers to an employee's subjective judgment about the fairness of the reward she/he got in comparison with the inputs (efforts, time, education and experience) when compared with others in the organization. The theory is based on individual employee's perception and feelings on how they are treated as compared with others (Armstrong, 2010). It is inevitable that employees will compare rewards with each other. The essential assumption of equity theory is that an employee will observe the input and consequent rewards of co-workers and compare it with his own efforts and perceived rewards. This evaluation can then result in a perception of equity or inequity (Fincham & Rhodes, 1999).

According to Arora (2000), when one's own outcome or input ratio is believed to be greater than another's, the individual is theorised to experience a state of overpayment inequity; causing feelings of guilt. In contrast, when one's own outcome/input ratio is believed to be less than another's, the individual is theorised to experience a state of underpayment inequity, causing feelings of anger. However, when one's own outcome or input ratio is believed to match that of other persons', a state of equitable payment is said to exist, resulting in feeling of satisfaction. This leads to an argument that people work well in accordance to what they regard as fair. Employees consider whether management has treated them fairly when they look at what they receive for the effort they have made. Maicibi (2003) agrees with this that employees expect rewards or outcomes to be broadly proportional to their effort. Ivancevich and Matteson (1999) are of the opinion that the theory highlights the factors associated with employees' attitudes towards remuneration and rewards. This theory is relevant in that we equate the employee with various departments and administrators. It applies not only to the monetary aspects but also on the human resource for health where a sub-county administrator compares his/her number of staff to that of another sub-county vis-a-vis the workload and population size.

2.2 Resource Allocation Process

According to Green (1992), resource allocation should be taken at the national and/or provincial level and budgeting should occur at the periphery/district. He goes further to explain that the process of resource allocation needs to be done within a clear framework of equity thus ensuring that the resources are allocated on the basis of need. Reagon et al., (1997), explored the issue further by highlighting the need for a planning approach that involves constant interaction and between different levels about the decision making process. Just like Green (1992), they

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maintained that the ultimate responsibility for the resource allocation decision rests with the central level. However, they went further to highlight the important role of the central level in the resource allocation process by arguing that the peripheral/district level will be concerned with maximizing the resource available for service provision in their area. This is because each level would like to deliver good health services to its population and therefore if given authority to allocate resources each district would prefer to have as much resources as possible. However, it should be noted that health care resources are limited and if such an approach is adopted, some districts will acquire a lot of resources while others acquire little or no resources at all. It is for this reason that Reagon et al., (1997) noted that the central should play an arbitration role between the competing demands for the limited resources from peripheral/district health service administration. Such an approach ensures that the limited resources are allocated equitably between different areas.

2.2.1 Resource Allocation Working Party (RAWP)

One mechanism that is widely used to evaluate and guide resource allocation decisions is that of a needs based formula. It encourages health planners at the local level to prioritize health according to their goals (Doherty and Van den Heever, 1996). Various formulae have been developed which attempt to distribute resources on the basis of need between geographical areas (Doherty and Van den Heever, 1996). The first needs based formula to be developed is the Resource Allocation Working Party (RAWP).

RAWP expressed the equity principle on resource allocation with the objective to allocate resources to local areas so that eventually there would be equal opportunity of access to health

care for people at equal risk. According to Buck and Dixon (2013), this principle has stood the test of time, and remains the fundamental objective of health resource allocation in England today. The main indicators of need that this formula took into account were: population size, adjusted by age/sex, morbidity and cross boundary movements.

The population size in each region was the main determinant that RAWP identified for the provision of health services. It was however noted that people have different needs for health care. For example, the RAWP report found that while men and women aged 65 years and above formed 14% of the population they occupied more than half of the psychiatric hospital beds. Thus in each region, population was weighted by national utilization rates of peoples in different age categories. It was further noted that even after taking account of age and sex differences, the population of regions still showed disparities in morbidity. However, the formula couldn't measure morbidity, hence decided to use standardized mortality as a proxy of morbidity.

In addition, the formula accounted for cross boundary movements to ensure that allocations were based on the populations served by a particular service and not simply those residing within a specific administrative boundary. A 'London Weighting' was introduced to compensate for the higher cost of health care provision in London. In a later version of the formula (DHSS, 1986), the region population was also weighted by a measure of social deprivation. A cross section study comparing morbidity and mortality measure with two scores of social deprivation in England showed a good relation correlation between mortality and morbidity, as well as between mortality and social deprivation (Mays and Chin, 1989).

Subsequently, revenue allocation targets were calculated by distributing the total recurrent budget available for the provision of the health services in England on proportion basis according to each geographical region's share of the weighted population. Resources were therefore shifted away from those regions perceived to be over resourced to those regions perceived to be under resourced. This redistribution was done gradually to avoid disruption of the delivery of health care services.

RAWP formula has therefore evolved over several years because of the change in population size and needs of such a population. The current formula used is called weighted capitation formula which revolves around population and all its components (DH, 2011). The components include:

(i) Hospital and Community Health Services (HCHS) Component;- This comprises of crude population, acute need, maternity need, mental health need, HIV/AIDS need, health inequalities, building costs, staff costs, medical and dental costs, land costs, emergency ambulance cost adjustments and finally other costs.

(ii) Prescribing Component; - This comprises of age and additional needs, health inequalities and normalized.

(iii) Personal Medical Services (PMS) Components;- This comprises of age and additional needs, General Practitioners pay, practice staff, land, buildings, other health inequalities and normalized (Buck and Dixon, 2013).

2.3 Equity within the health sector

There has been a debate in literature on definition of equity and it seems there is no single accepted definition of health sector equity. However, the consensus is; equity implies that health care resources should be distributed in a "fair" or "just" way within a society (Mooney, 1983).

This means that all people are treated fairly in relation to benefitting from health services regardless of their socio-economic status or place of residence. However, it should be noted that fairness is a value judgment implying that what one individual views as equitable may not seem equitable to another (Reagon et al., 1997). In attempt to review the definition of equity, Mooney (1983), argues that there are seven possible definition of equity. These include: equal expenditure per capita (an equitable allocation of financial resources to each individual in society); equality of inputs/resources per capita (different price levels and different ability to purchase health care inputs in different areas); equal inputs for equal need (considers need beyond population size for health services); equal access for equal need (equal costs to patients; takes to account costs of accessing health care in different regions). Others are: equal utilization for equal need (considers demand and supply in discriminating positively for those who are less willing to utilize health care); equal marginal met need (improving geographical allocation based on the cost benefit approach) and equality for health (emphasizes equity for health).

Within the context of geographical resource allocation of resources, the most commonly used definition is that of equal access to health services for equal need. This is according to Whitehead (1992) and it implies that there should be equal entitlement to the available resources to everyone, that is, a fair distribution throughout a country (in this case a county) based on health care need and ease of access in each geographical area, and the removal of other barriers to access. However, it is difficult to measure access. Consequently, according to McIntyre (1997), geographical resource allocation mechanism usually have the goal of achieving equity in the distribution of resources per capita adjusted for health care needs.

Equity needs to be distinguished from equality. The distinction between the two concepts is important because according to Whitehead (1992), being unequal may be judged to be fair and equitable. However, Whitehead (1992) defined inequality as systematic, unavoidable, and meaningful differences among members of population; while inequity as the existence of variations which are not only unnecessary and avoidable, but also unjust. She pointed out that equity does not mean that everyone should enjoy the same level of health and consume services and resources to the same degree but rather the needs of each individual should be addressed. She concluded that any inequity is an inequality but not every inequality is an inequity and inequity is an unjust and potentially avoidable inequality.

2.4 Principles of equity in health

According to Mooney (2000), there are two main principles of equity in health; horizontal and vertical equity, which have been defined and used in the realms of health care access and utilization. He went further to define horizontal equity as equality in the treatments of those with equal needs while vertical equity refers to unequal treatment of unequals. On whether health sector decision should be guided by vertical or horizontal equity, it is debatable. According to McGrail et al., (2009), the main focus on equity issues until recently had been on achieving horizontal equity. However, according to McIntyre et al., (2002) and Babaie (2012), there are exceptions in that some studies focusing on issues of vertical equity in health financing. Generally, the concern has been the need for preferential allocation of resources to those with the worst health status and this has triggered debates on the issue of vertical equity. For Mooney (1996), there should be a need for emphasis on vertical equity in countries with substantial differences in health status between different groups in society. He further mentioned that in the

normal cases, ill health is not randomly distributed across different groups in society. This prompted Babaie (2012) to observe that society might want to give preference, on vertical grounds, to those groups who on average are in poor health, thus implying preferential allocation of health care resources in favour of those with greatest need.

Sutton (2002) argued that horizontal equity may not be considered as a fair distribution of health care as it appears to be inconsistent with policy statements concerning equity in health care. In addition, there is evidence indicating failures in reaching equal health using horizontal equity approach. Babie (2012) while quoting Deeble and others gave an example which showed that life expectancy in indigenous communities in Australia was 20 years shorter than in non-indigenous populations and the proportion of diabetics was higher in the indigenous community than the non-indigenous groups after a long period of time of allocating resources using horizontal approach. Subsequently, the RAWP of the United Kingdom was established based on the principle of equal opportunity of access for equal need. It was however concluded that the patterns of health services would not resolve the unfair inequalities in health outcome. This resulted in the revision of the resource allocation formula to contribute to a reduction in health inequalities (Sutton et al., 2002; Babaie, 2012).

In line with the concept of vertical equity, Mooney (2000) indicates that to reduce inequity in health status over time, it is necessary to give a greater weighting to the potential health gains of those with very poor health status. Therefore, according to Manthalu et al., (2010), vertical approach should be applied in the realm of health care because it involves allocation of health resources based on health outcomes or the determinants of health (or both), thus indicating the

need for health care and contributing to the reduction of health inequities. Babaie (2012) concurred by saying that some kind of redistribution of resources happens in the vertical equity approach which makes it more effective than the horizontal approach in the reduction of health inequities.

2.5 Empirical Literature Review

Bosset et al., (2003) did a study to investigate the relation between decentralization and equity of resource allocation in Colombia and Chile. The findings suggested that decentralization can improve equity of resource allocation but under certain conditions and with some specific policy mechanisms. In the two countries, equitable levels of per capita financial allocations at the municipal level were achieved through different forms of decentralization: the use of allocation formulae, adequate local funding choices and horizontal equity funds. Findings on equity of utilization of services were less consistent but it was shown that increased levels of funding were associated with increased utilization. In Chile, the allocation pattern of national sources of funds was highly skewed in favour of the wealthier municipalities in terms of local revenues before decentralization. In Columbia equity seems to have been achieved through a significant increase in available national funding that was distributed to reduce the gap between the rich and the poor rather than through a re-distribution of resources from the rich to the poor as the case in Chile. It was further shown that the use of formula based entirely on population by both countries created or maintained a more equitable allocation of national funds among municipalities during the period of decentralization.

Guindo et al., (2012), did a study to identify decision criteria and their frequency reported in the literature on resource allocation and healthcare decision making. Criteria were identified from studies which were performed in several regions of the world involving decision makers at micro, meso and macro levels of decision and from studies reporting on multi-criteria tools. Large variations in terminology were observed which defined criteria with 360 different terms identified. These were assigned to 58 criteria classified in 9 different categories including: health outcomes; types of benefit; disease impact; therapeutic context; economic impact; quality of evidence; implementation complexity; priority, fairness and ethics; and overall context. It was observed that the most frequently mentioned criteria were: equity/fairness (32 times), efficacy/effectiveness (29), stakeholder interests and pressures (28), cost-effectiveness (23), strength of evidence (20), safety (19), mission and mandate of health system (19), organizational requirements and capacity (17), patient-reported outcomes (17) and need (16).

Wagstaff and Claeson (2004) carried out a study across the globe and targeting health expenditure. They noted that there were disparities on resource allocation especially to the disadvantage of the rural and/or poor regions. For example, in Mozambique, Zambezia received seven times less government spending on health per capita than Maputo City. Likewise, in Lesotho, the poorest district received only 20 percent of the amount the capital city received in per capita allocations of public expenditures on health. Subsequently, in Peru, per capita allocations through the regional budget (which excludes teaching hospital allocations) were 66 percent higher in the Lima region than in the very poor regions. Bangladesh too, had more developed districts receiving more per capita than less developed districts.

In a study done by Bossert and Beauvais (2002) on decentralization of health systems in Ghana, Zambia, Uganda and the Philipines, the study findings suggests that Philipines had the most difficulty on financing issues because allocation to local governments was not in accord with the responsibilities. They observed that the provinces which were responsible for the most expensive hospital gained the least, while the municipalities and Barangays with the least expensive care gained the most. According to them, however, the problem was not due the local choice but rather an error in the central design of the allocation formula. In almost a similar study in Zambia, Bossert et al., (2000) found out that a formula for assigning budgets to districts resulted in a relatively equitable per capita allocation among districts. They further observed that since there may be epidemiological and cost differences among districts, it might be useful to develop a need based formula for allocating central funds among districts.

In Namibia, Zere et al., (2007) did a study using a Namibian Demographic and Health Survey to inform on developing a need based resource allocation formula. In the study, it was revealed that the regions with more need of heath care currently get a lower share of the public health sector resources while those with relatively less need are allocated a greater share of resources. This is in line with the inverse care law.

According to El-Saharty et al., (2009), after Ethiopia adopted decentralization of health services at the sub-national level, it was observed that the decentralization was more effective in those regions that increasingly strengthened their management and institutional capacity and where regional governments were able to prioritize their needs and adapt the corollary strategies to local needs. Subsequently, health outcomes like child and maternal mortality rates decreased;

this might have been as a result of other health strategies being implemented at the same time like improved staffing and improved resource allocation to health. However, decentralization was influenced by the clientelistic center–region power relationship compounded by weak accountability and lack of community voice.

In Kenya, a study done by Chuma (2001) on resource allocation in the Kenyan health sector as a question of equity revealed a great geographical inequities in the allocation of health care resources in Kenyan health sector. By using both weighted and non-weighted population, Western, Nyanza and North Eastern provinces seemed relatively under-resourced as compared to other provinces. It also showed that there was a relationship between socio-economic indicators and the inequitable health care service provision in the provinces. Results from the interviews at the central and the district level indicated that health sector commitment to equity exists in theory but more often than not it does not arise in the resource allocation process. For example, at the central level one interviewee noted that, Kenya was still far away from equity because it is documented but often put aside when it comes to the resource allocation process.

The study also noted that resource allocation followed the forces of supply and demand, with provinces which had more facilities getting larger share of resources than those with few facilities. Subsequently the needs of the population were rarely taken into account in the allocation process.

On the human resource distribution, the study noted that re-distribution process was difficult. This was evident by most interviewees stating that health care workers would not be willing to

work in remote rural areas like North Eastern province but instead prefer urban areas to work in a place. The reasoning was those areas are insecure and do not have social amenities they would enjoy in the urban areas.

2.6 Overview of Literature

From the literature above, there are many factors that influence resource allocation to health. These include: population size, age, deprivation, asset indices, poverty index, geographical coverage, health needs, health indicators and performance. These factors are also the basis of how such allocation impact on health equity and equality. Literature also reveals that there is resource allocation disparity between the poor regions and regions considered to be "rich" where poor regions are disadvantaged in resource allocation. Even-though several attempts have been made to justify resource allocation criteria in some states, there is inadequate literature on a clear process or a single most agreeable criterion followed when allocating resources in health sector across the globe.

In Kenya, the available and published literature on equity on resource allocation looked at the whole country using the provinces as geographical regions; this was done almost fifteen years ago long before devolution. After devolution, the studies done so far are about the successes and challenges of devolution of health services especially on maternal child health in general and free maternity services in particular. There are also literature on motivation and job satisfaction for the health care workers in the devolved health facilities. However, there is currently no published literature on process of resource allocation to health at the county and sub-county level and how such a process impact on health equity and equality.

CHAPTER THREE

STUDY METHODOLOGY

3.1 Introduction

This chapter presents the methodology that was used to address the objectives of the study. Specifically the chapter discusses the study area, research design (target population, study participants, sample size and procedure), conceptual framework, explanatory models of health equity, data collection tools, validity and reliability of the research instruments, administration of research instruments, data collection, data analysis and finally ethical consideration.

3.2 Study Area

Baringo County is partially an arid and semi-arid county situated in former Rift Valley province. The county measure 11,015.3 square kilometers and boarders eight other counties, namely: Turkana and Samburu to the North, Nakuru to the South, Laikipia to the East, West Pokot, Elgeyo Marakwet, Kericho and Uasin Gishu to the West (KIRA, 2014). It has six (6) sub counties: Koibatek, Mogotio, Baringo Central, Baringo North, East Pokot and Marigat.

Table 2 shows the population distribution, the area coverage and the number of people per square kilometer per sub-county (see also appendix 4 for area coverage).

Table 2: Population Distribution and Area Coverage per sub-County

YEAR	SUBCOUNTY	AREA COVERAGE		POPULATION		POPULATION /SQ KMs
		Square Kms	Percentage	Actual Number	Percentage	
2014	Mogotio	1314.6	11.93%	69307	10.97%	52.72
	East Pokot	4516.8	41.00%	151428	23.97%	33.53
	Baringo Central	799.9	7.26%	92638	14.67%	115.81
	Koibatek	1002.5	9.10%	119689	18.95%	119.39
	Baringo North	1703.5	15.46%	106632	16.88%	62.60
	Marigat	1678	15.23%	91945	14.56%	54.79
	TOTAL	11015.3	100.00%	631639	100.00%	57.34

3.3 Research Design

This was a descriptive study that employed both qualitative and quantitative research methods. Qualitative data includes: in-depth interviews of key officials in health and finance departments and Focused Group Discussion (FGD) for health care providers. Quantitative data were gathered from the budgetary allocation records both at the CRA, national treasury, MOH (e.g. HSSF and HIMS) and county treasury/finance department. The data also includes the distribution of health facilities, health personnel and the workload per sub County. The research also looked into the distribution of the funds to various health facilities like dispensaries and health centres within the county.

3.3.1 Target Population

The target population for this research was the county/sub-county health department administrators, finance department administrators and health care providers. These were: county director for health services, county chief health officer, county chief finance officer, all sub-County Medical Officers of Health (SCMOH) and/or their representatives and also in-charges of twenty two (22) out of the twenty four (24) sampled facilities.

3.3.2 Sample Size and Procedure.

The number of people who participated in the study were thirty one. Those who participated in the in-depth interview were: one chief health officer, one chief finance officer, one director of health services and six SCMOH or their representatives. Twenty two health care providers (in-charges of dispensaries and health centres) participated in the FGD. Several other quantitative data were also obtained from the sub-county and county health records and information officers,

county HSSF accountants, health administrators, county pharmacists and county heads of various health cadres.

For the health administrators there was no sampling technique used as the study was designed to interview them. However, for those who participated in the FGD, a random sampling was used to select the facilities whose in-charges were to participate in the study. Twenty four facilities (twelve dispensaries and twelve health centres) were randomly selected with each sub-county having four facilities (two dispensaries and two health centres). The in-charges were then contacted through their mobile numbers and requested to participate in the study. Twenty two in-charges managed to participate in the study. Three FGD were held with two having eight in-charges each and one having six in-charges.

3.4 Conceptual Framework

Figure 2 shows a conceptual framework that signifies how population size, workload (as OPD/in patients), health indicators (which in this case includes number of deliveries, fully immunized, family planning, 4ANC visits and infant mortality) influence health resource allocation to various health facilities, sub-County health management teams and to individual sub-counties. In this case there is an assumption that health resources allocation was based on population size, workload and health indicators. Though, information on health indicators were collected, they could not be used for analysis due to data inaccuracy.

Figure 2: A Conceptual Framework on Resource Allocation and Distribution
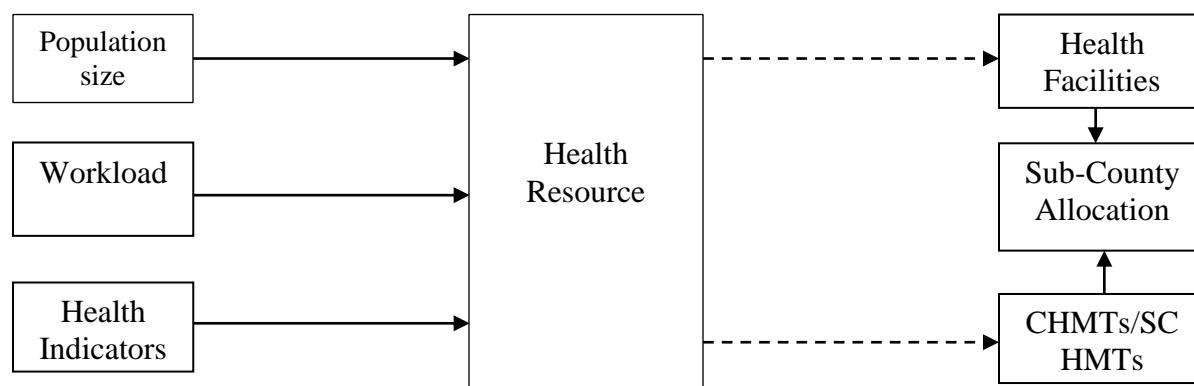
3.5 Data Collection Procedure

Interviews were conducted from relevant office holders in health and finance departments described in sub-section 3.3.1 in their offices or at the trainings some of them were attending. All the three FGD two with eight participants each and one with six participants were held at various meeting halls in three towns within the county. This was possible as the in-charges of the facilities were requested to meet at a central place: Baringo Central and Baringo North in Kabarnet; Koibatek and Mogotio in Koibatek and Marigat and East Pokot in Marigat. There were two people collecting the information, one leading on questioning, one taking notes and audio recording.

3.6 Data Collection

The research looked at the budget process at the county and health resources allocation/distribution at the sub-counties for the fiscal year 2014/2015. This information was obtained from the heads of the health and financial departments at the county and sub-county levels. It also looked at the involvement of the service providers in health budget making process, understanding of resource allocation/distribution, challenges in of resource distribution,

general quality of health services through FGD. The 2014/2015 fiscal year was chosen because most health resources allocations were itemized and grouped or could be easily grouped per sub-county.

3.6.1 Data Collected

The study collected various types of data that were considered relevant to this study as presented in appendix 3, 4A and 4B. In summary the data collected included the following:

Number of health care providers: This data was provided by the county heads of various health cadres. For example, the county health nurse provided information on the number of nurses per sub-county. Likewise, pharmacists, Medical officers of health and clinical officers provided information related to their discipline.

Number of health facilities: The actual number of health facilities per sub-county was provided by the deputy director of health services as at August 2014. This is attached in appendix 7.

Population size and workload: This included: the total number of population/catchment population per sub-county, workload per sub-county and Inpatient/outpatient per sub-county.

Health indicators: Average number of family planning, fully immunized (for under ones), deliveries, 4 ANCs and infant mortalities were collected from the secondary data for the year 2013/2014 and 2014/2015. However, this information was not used in the analysis.

Financial allocation/expenditure: This was an estimate of both development and recurrent expenditure or amount allocated per sub-county for the year 2014/2015. This included amount from HSSF/national government, county government and user fee for hospitals. See appendix 6.

Qualitative data: This included: participation in the budget making process; criteria used in allocation/distribution of health resources; factors constraining resource allocation; rate of extent

of resource distribution and its impact to quality of health; need for re-distribution and factors that may constrain re-distribution and a need for a needs-based formula. See appendix 3.

3.6.2 Data Collection Instruments/Tools

Data collection tools used were: semi-structured interview questions, audio recorder and notes. Semi-structured questionnaires, health resource check-list and health indicators check-list are attached in appendix 3, appendix 4A and appendix 4B respectively.

3.6.3 Validity and Reliability of Research Instruments

Validity is the degree to which a test measures what it purports to measure. To test the validity of the instruments, the researcher conducted a pilot study in Nyandarua County. This helped identify potential sources of challenges that were likely to be faced in the actual study and address them before. On the other hand, reliability is a measure of the degree to which a research instrument yields consistent results or data after repeated trials. In this research, there was no reliability test used as it was considered not necessary.

3.6.4 Administration of the Research Instruments

Both quantitative and qualitative data were collected. Qualitative data collected through an in-depth interview using semi-structured questions, notes, video/audio tape recorder and FGD while quantitative data collected as secondary data from the county department of finance and health.

3.7 Data Analysis

Before analysis, data transcription was done then compared and harmonized with the written notes. Quantitative data was then coded for ease of analysis. Quantitative data was analyzed using excel while qualitative data was analyzed manually. Data was analyzed in the following way:

Health facility distribution: This was analyzed as actual numbers and was compared to the population and workload.

Health budgetary making process: The study discussed the current budget making process, its challenges and how it can be made better.

Health resources allocation and distribution criteria: This was analyzed per sub-county and cross-checked to ascertain whether equity was observed or not.

Equity in distribution of financial resources: The study looked at both developmental and recurrent expenditure per sub-county. It further analyzed sub-county financial distribution or expenditure and whether there was equity. In particular, the study analyzed distribution of financial resources against population and workload per sub-county. It also looked at per capita expenditure and compared standardized allocation using average per capita expenditure per sub-county.

Equity in distribution of human resources for health: Distribution of human resources was analyzed against population size, workload, number and level of health facilities per sub-county. It further compared the number of nurses and doctors per 100,000 people against the WHO recommendations and the magnitude of the disparities. Lastly it analyzed the distribution of nurses/C.Os to rural population and rural health facilities.

3.9 Ethical Considerations

Permission and authority to collect data was sought from the relevant authorities i.e. the county public service (human resource and administration department), county executive committee member of health, county director of health and acting county chief health officer. Interviewees and FGD participants were provided with adequate information on research and consented before the interview or FGD was conducted. Their rights to respond to the questions were also respected. Privacy was ensured during data collection and all data records were/are stored in a manner that did/does not expose the identity of study respondents.

3.10 Limitations

i) Health service consumers were not included in the study due to constraints of time, inadequate funds as well as the scope of this study. Health service consumers are important because they demand for health services hence the need.

ii) Interviewing the County Executive Committee (CEC) member of health, the county assembly chairperson of health, the county assembly chairperson on budget and two facility in-charges who were to attend FGD was not realized due to commitment, limited time and transport challenges from the facilities.

iii) Data on the population structure per sub-county was not available. This data would be useful to refine resource allocation further.

iv) Data on health indicators could not be used for analysis as it seems the data was inconsistent i.e. the county data was not tallying with the sub-county data.

ANALYSIS OF RESOURCE ALLOCATION AND DISTRIBUTION IN BARINGO
COUNTY WITH REGARD TO EQUITY

4.0 Introduction

This chapter presents results. Section 4.1 presents the distribution of health facilities with regard
to the population and comparison of workload and catchment population. Section 4.2 presents
budget making process at the county. Section 4.3 presents health resources allocation and
distribution criteria. Subsequently, section 4.4 presents equity in distribution of the financial
resources, section 4.5 presents equity in distribution of human resource for health and finally
section 4.6 summarizes the whole chapter.

4.1 Distribution of Health Facilities

Table 3 shows the distribution of health facilities (both public and private) per sub-county as at
August 2014 and duly registered by the MOH. For the public facilities, Baringo North had the
highest number of health facilities in the county followed by East Pokot, Baringo Central,
Mogotio, Koibatek and Marigat. When the private facilities are considered, Baringo Central had
the highest number of health facilities, followed by East Pokot and Baringo North with the same
number and then Koibatek, Mogotio and Marigat follow in that order. However, Koibatek has
the highest number of private facilities followed by Baringo Central.

Kabarnet and Eldama Ravine which serves as the administrative headquarters of the two towns
respectively are urban and with access to amenities where those who visit the county or work in

the county reside. Secondly, people who stay in or around these towns are most likely employed or do their own businesses and tend to have a reliable source of income. They can therefore afford health services in the private health facilities thus partly explaining the many private health facilities in these two sub-counties.

Table 3: Distribution of Health Facilities per sub-county as at August 2014

SUB - COUNTY	Public Health Facilities			Total	Private/FBO/NGO Facilities				Total	Grand Total
	Disp	H C	Hosp		Disp	H C	Hosp	Med Clinic		
Baringo C.	30	6	1	37	7	0	0	4	11	48
Baringo N.	39	4	1	44	1	0	0	0	1	45
Marigat	20	3	1	24	2	0	0	0	2	26
Koibatek	23	4	1	28	1	1	2	7	11	39
Mogotio	27	4	0	31	0	0	0	2	2	33
East Pokot	36	4	1	41	3	1	0	0	4	45
Grand Total	175	25	5	205	14	2	2	13	31	236

Source: Adopted from Baringo County Government: Department of Health Services.

4.1.1 Distribution of the Health Facilities with Regard to Population.

In this sub-section, distribution of the health facilities was considered in reference to the projected population of 2014. This may represent the average catchment population per facility and can be used to predict the workload per facility. Table 4 shows that when the public health facilities were compared to the population per sub-county, Koibatek sub-county had the highest number of people per health facility, followed by Marigat, East Pokot, Baringo Central, Baringo North and finally Mogotio. In other words this followed the ratio of facility to the population per sub-county. When all the facilities including private ones were considered then the ratio changed as follows: Marigat had the highest ratio, followed by East Pokot, Koibatek, Baringo North, Mogotio and finally Baringo Central. In general, when population is considered as the only or the main factor for demand of health care services then the sub-county with the highest ratio of

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facility to population requires the highest additional number of health facilities and health care providers. From this data, therefore Marigat sub-county needs the highest additional number of health facilities and health care providers while Baringo Central needs the least.

The above statement is only true if and only if all the facilities are optimally functional and equidistantly distributed. However, this is not usually the case. According to one interviewee, health facilities in East Pokot are sparsely distributed and most of them are not operational due to lack of technical staff and insecurity. Even some of the ones operational are run by un-qualified staff in the name of nurse aids or patient attendants and this is not unusual. *"Currently, East Pokot has 54 health facilities. Operational are 30 and 24 are closed. Out of the 30 operational, 6 are manned by patient attendance (who are unqualified), 24 are manned by nurses. Out of the 24, 16 are immunizing not by design but by chance…….yes there is a problem. The 24 are not operational because of lack of staff, equipment and finances. Staff left the 6 stations due to insecurity or transferred without even them being released. The facilities could not be closed because, for example, in one of the location there is only one facility with a population of more than 10,000 people; they would better be run by a quack, ……….and save lives of many people."(Sub-County Medical Officer of Health, 08/10/2015).*

Table 4: Number of people per Health Facility per sub-county in 2014

SUB - COUNTY	POPULATION (2014)	Ministry of Health			Population per Public H Fs	Population per All Facilities
		Pop/Disp	Pop/H C	Pop/Hosp		
Baringo C.	92,638	3,087.9	15,439.7	92,638	2,503.7	1,930.0
Baringo N.	106,632	2,734.2	2,6658	106,632	2,423.5	2,369.6
Marigat	91,945	4,597.3	30,648.3	91,945	3,831.0	3,536.4
Koibatek	119,689	5,203.9	29,922.3	119,689	4,274.6	3,069.0
Mogotio	69,307	2,566.9	17,326.8		2,235.7	2,100.2
East Pokot	151,428	4,206.3	37,857	151,428	3,693.4	3,365.1
Total/Average	**631,639**	**3,609.4**	**25,265.6**	**126,328**	**3,081.2**	**2,676.4**

It should be further noted that the total catchment population for the four sub-county hospitals and the one county hospital in 2013/2014 was 98, 365 people or 15.98% of the total population of the county. All the five hospitals are situated in the administrative headquarters of the specific sub-counties. The populations served by these hospitals are considered urban, have formal education, employed, run their own businesses or generally have a source of income. They may therefore easily afford and access health services as opposed to the remaining 84.02% which are largely rural and considered socio-economically "disadvantaged". This should be a concern when allocating resources to health so as to improve accessibility and affordability of health care services in the rural areas.

4.1.2 Comparison of Workload and the Catchment Population

In this sub-section, the ratio between the actual catchment population of the facilities (i.e. the total population of the county) was compared with the number of people who sought health services in these facilities (workload) per year. This ratio translated into the average number of visits of a person to a facility per year. Figure 3 shows the average number of visits (both inpatient and outpatient) per person per sub-county for the year 2013/2014. The average number of the visits to a facility for the county per person per year was 1.30. For the outpatient the average visit was 1.27 and for the inpatient it was 0.03.

Residence of East Pokot had the lowest number of visits per person per year (0.57) while Baringo Central had the highest (2.13). In other words, on average, in East Pokot each person visited a health facility 0.57 times while for Baringo Central it was 2.13 times. For East Pokot, this could be due to inaccessibility of the facilities because of a long distance to a facility and

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poor infrastructure. It could also be due to: non-functional facilities as explained by one of the sub-county medical officer of health, un-affordability for the hospitals and investigative charges in health centres and dispensaries or inadequate health education or awareness.

According to Kenya Household Health Expenditure and Utilization Survey of 2013, the national average number of visits (utilization rate) of the health facilities was 3.1 per person per year. Utilization rate of health services in Baringo County including individual sub-counties fall much below the national average. This may mean that accessibility and to some extent affordability of the health services in Baringo County is still a challenge (MOH, 2014). There could also be a likelihood of good preventive measures to keep people out of the health facilities. However, this could not have been the case as there were no allocation for preventive health services like community hygiene and sanitation, outreaches, school programmes and community health education.

Figure 3: Average Number of Visits to a Health Facility per person per year.
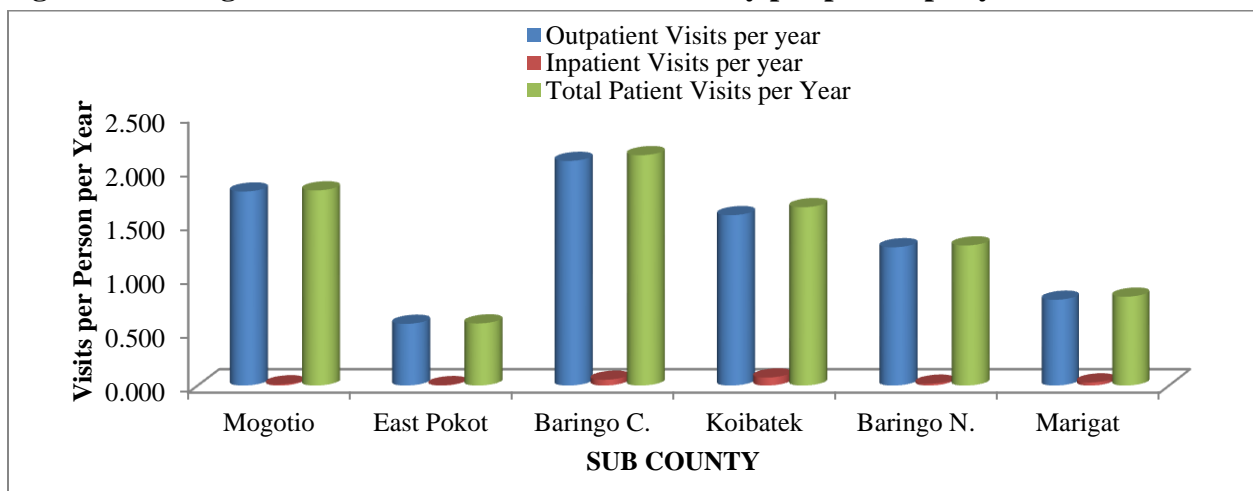
4.2 Health Budgetary making process

The senior health and financial administrators interviewed acknowledged that the general budgetary making process at the county is as per the public finance act of 2012. According to this act there are stages in the budget process which includes in that order: integrated development planning process (both long and medium term); planning and determining financial and economic policies and priorities; preparing overall estimates in terms of budget policy statement; adoption of budget policy statement by county assembly; enacting the appropriation bill and any other bill required; implementing the approved budget; evaluating and accounting for the budgeted revenues and expenditure and finally reviewing and reporting on those budgeted revenues and expenditure every month. The act is also categorical that there shall be public participation in the budget making process. On the approach used, they were in agreement that it was a multi budget approach where zero based, incrementalism and programme budgeting were used.

The senior health and financial administrators were equally categorical that there was involvement of the community, service providers and the sub-county health administrators in the health department budgetary making process. According to them, the participation of these stakeholders was as described in the following excerpts: One interviewee said *"In the health department, bottom up approach is used i.e. facilities bring their budgets which are consolidated into the main budget for resource allocation and distribution."* Another interviewee said *"Budget making process in the health department includes getting views from the sub-county level. They have their own budgetary estimates which they come, then we collect and we collate, then we prepare our own budget per sub department at the county level and then there are those central…..i.e. the main office budget. So we do both incremental and rational kind of budgeting*

process.” The health department also lobbies for their budget to be approved and passed by the county assembly. This is usually done through the county assembly health committee.

Contrary to this explanation on the participatory of the budget making process, health administrators and service providers reported otherwise. They insisted that the process is not inclusive and they are rarely involve; even so they are only informed when the process is over or when they are needed to account or rather sign for the expenditure that they were not part of. However, they agreed that the executive at the county government worked with the ward administrators and Members of County Assemblies (MCAs) who may not be experts or technical advisors in all areas. The community is also rarely involved and when they are involve they simply play a listening and/or endorsement role of the budget. One interviewee retorted *“No public participation in budget making. There is a time as Sub County Medical Officers of Health (SCMOH) we used to be called to make a budget, after some days we are called to make another one but nothing came out of this… no money was coming on board until we refused.”* Another one said *“County management does the budgeting and tell county workers what they have to work with. They however, work with ward administrators.”*

Other statements related to budget making process by the health service providers were: *“The county administrators do the budget then they bring to each ward; they just announce that they will come tomorrow and people go and listen to them. In this case they use the ward administrators and MCAs”. “There was one I participated in and it was a public participation where the community raised their issues in order of priority but the decision part of it was left to the county administrators.”*

4.3 Health Resource Allocation and Distribution criteria

In Baringo County, there was no properly laid down policy, criteria or formula to allocate resources either to the sub-counties, facilities or health programmes. When asked about criteria used to allocate resources, one interviewee retorted *"There is no criterion followed. Blanket resource allocation is done."* However, through the interviews and the FGDs, it emerged that there were several considerations that ought to have been used or should be followed when allocating and distributing health resources to the sub-county level or to various health facilities. These include:

Population size and structure: Many interviewees contended that population size is a major factor to be considered when allocating resources. This is because it presumed that the higher the population, the higher the resources needed to provide health services to that population. Population structure is also necessary in determining the quantity of health services and specific health services demanded based on the percentage proportion per population group.

When asked about how to know the actual need during one of the FGD conducted, one participant replied *"Base line survey to be done at all the facilities to determine their needs then budget and allocate resources as per their needs."*

Workload: Workload featured as one of the main factors for resource allocation especially human resources to the hospitals and health facilities. However, few participants from FGDs voiced their concern that some parts of the county especially East Pokot has facilities that are far apart and also known to be insecure. It is therefore likely that accessibility of health services in these areas is low thereby reducing the number of workload for specific facilities and also the sub-county as a whole. In response to the distribution of staff based on the workload, a SCMOH

said *"....depending on the workload of a facility, it is what determines how many staff are supposed to be in that facility."*

Type of facility and services offered: A level of facility inform the kind of the health services a facility offers. Dispensaries and health centres offer limited health services as opposed to sub-county or county hospitals, which offer a wide range of health services. Most people would therefore go for specialized services in hospitals. The hospitals also offer both inpatient and outpatient services as opposed to most health facilities that only offer outpatient health services thereby increasing the workload. It is therefore imperative that the hospitals receive more funding and more human resources than the health facilities. One of the senior most health administrators said *"Service delivery is looked upon when allocating funds to health. Level of facility determines quality and variety of services offered."* Subsequently one SCMOH interviewed indicated that *"I can't take a laboratory technologist to a facility where there is no laboratory, there is no microscope, what will he do."*

Level of training and specialization: Allocation of human resources usually considers the level of training of the staff. This will determine where they should be deployed to work and whether to have specific responsibilities to undertake. One senior health administrator said *"I can't take a surgeon to go and work in a health centre."* While a SCMOH interviewee responded that: *"When I have only one or two staff trained on cervical cancer in the whole sub-county, the best I can do is to post them to the busiest and a centralized health centre."*

Geographical area (terrain) and land mass: According to most interviewees "terrain" was listed as one of the major factors to be considered since the sub-counties differs largely on their infrastructure. This in turn determines the transport system and accessibility of health services

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and other social amenities. Land area should be considered when allocating health resources; the larger the land area, the higher the resources. In addition, areas with difficult "terrain' should be allocated more financial resources to conduct outreaches, have community health education and school programmes so as to improve the accessibility of health services. One of the senior most health administrators said: *"The County is working at reducing the distance a client should walk to reach a health facility."* A SCMOH indicated that *"more funds to be allocated to hardship areas to improve on the quality of health services and hardship allowances for those sent to interior areas."*

Health indicators: It was reported that health indicators depict a performance of a facility or a sub-county in terms of the quality of the health services. Therefore, the sub-counties or facilities with poor health indicators should be allocated more resources. It should also be noted that health indicators like maternal and infant mortality are vital health statistics that are used globally to rate a countries' health status. One of the SCMOH explained that *"When you have one staff in a facility who is expected to be everything, what do you expect? The staff will try to clear the long queue even if he/she is overworked. This may result in poor quality of services hence most patients may not be willing to come back to this facility and if the patient is unable to go to another facility it means there is reduced workload and hence poor health indicators."*

Socio-economic status (poverty index): There were concerns that the socio-economic status of the community should be considered when allocating resources. Some parts of the county do not have significant economic activity thereby reducing the chances of the patients affording specialized health services and/or transport costs to the health facilities. There should therefore be funding to these areas to aid in outreaches, to subsidize the specialized health services or

make the services cost free. When responding to socio-economic status (poverty index) as a factor to consider when allocating resources, one interviewee replied *"Economically, there is no agricultural activity, no active farming; always insecurity/cattle rustling which prevent development of East Pokot. Thus poverty index of East Pokot should be considered."*

Other factors mentioned were: number of facilities, previous allocations, "marginalized" areas, costing of the health services, gender for the health care service providers, location of a facility, population influx (influx index), level of health management structure and cultural practices. Some interviewees argued that the higher the number of facilities, the higher the resource allocation; subsequent allocations of resources always depend on the previous allocations; "marginalized" sub-counties should be allocated more resources at the initial stages to "bring" them to the level of the "well of" sub-counties; costing of the services should be done first to know how to allocate/distribute resources and finally ladies or women may not cope with the harsh climatic and security challenges in some parts of the county.

A SCMOH said *"Costing of the service delivery will aid in showing number of staff required, equipment and other resources."* In justifying the location of a facility as a factor to resource allocation, one SCMOH said *"You know some facilities are quite remote and the more remote a facility is the less people are going to attend and the less the workload, so if the facility needs three or four staff it might need just one staff."* Justification on gender was that there are some areas that are so "harsh" for a female staff to work in especially if she has a child and when forced they may not perform effectively. One interviewee said *"You post a young female in East Pokot but once they give birth they never come back; instead they seek for transfer to other areas."* It was also noted that there are financial allocations for emergencies and disaster

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preparedness especially in high risk areas. The human resources are also mobilized and temporary re-deployed when there are disasters like cholera outbreak.

4.4 Equity in distribution of Financial Resources.

This section explores the budget, sources of funding, distribution and estimated expenditure of the financial resources for health for the Whole County and sub-counties for the fiscal year 2014/2015. However, some of the information were not availed due to the fact that they had not been compiled, there was uncertainty on which financial year they fall, there were errors in distribution or they had not been grouped per sub-county e.g. maternity re-imbursement, equalization fund, CDF money and other donor or well wishers funding (save for HSSF and DANIDA).

The total budget for Baringo County in the fiscal year 2014/2015 was KShs. 1,861 million of which about KShs 1, 427million (76.65%) was for recurrent expenditure and KShs. 434.5 million (23.35%) was for development (see appendix 5 for details). For the purpose of this study, the budgetary allocation was presumed as the actual expenditure for the same year. Table 5 and figure 4 shows the distribution of the financial resources per sub-county.

Table 5: Estimated Distribution of Health Finances per sub-county in KShs. Million

SUBCOUNTY	Recurrent Expenditure	Development Expenditure	Total Budget/Expenditure
Mogotio	215.31	60.00	275.31
East Pokot	224.79	85.00	309.79
Baringo Central	291.32	103.00	394.32
Koibatek	245.66	79.00	324.66
Baringo North	255.40	46.50	301.90
Marigat	198.69	61.00	259.69
TOTAL	**1,431.17**	**434.50**	**1,865.67**

Figure 4: Percentage Distribution of Health Finances per sub-county
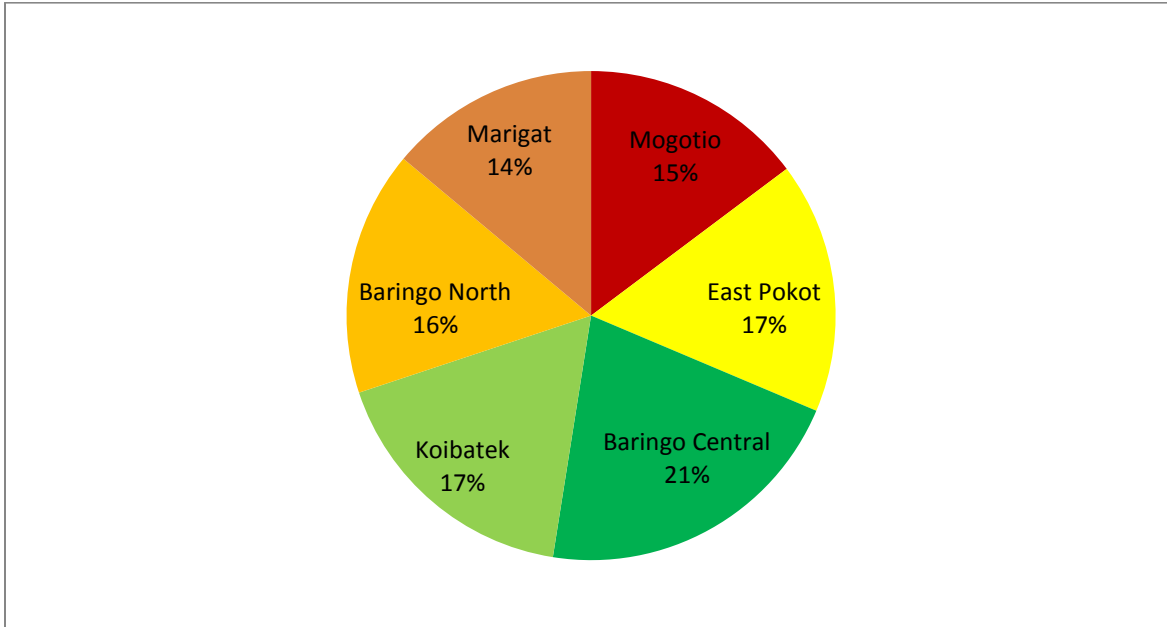
From table 5 and figure 4, it is evident that Baringo Central received the highest allocation of financial resources, followed by Koibatek, East Pokot, Baringo North, Mogotio and Marigat in that order.

4.4.1 Distribution of Financial Resources Relative to Population

When the budgetary allocations were compared with the population as shown in table 6, the per-capita expenditure varied significantly. The average per-capita expenditure for the whole county was KShs. 2,953.70; Baringo Central had the highest per-capita income of KShs. 4,256.55, followed by Mogotio (3,972.34), Baringo North (2,831.20), Marigat (2,824.39), Koibatek (2,712.57) and finally East Pokot (2,045.82). If population was the only basis of financial resource allocation then it may be deduced that financial resource allocation was skewed in favour of Baringo Central but dis-favours East Pokot.

Table 6: Per-capita Expenditure

SUBCOUNTY	Mogotio	East Pokot	Baringo Central	Koibatek	Baringo North	Marigat	TOTAL/ Average
POPULATION	69,307	151,428	92,638	119,689	106,632	91,945	**631,639**
Actual Allocation (KShs. Millions)	275.31	309.79	394.32	324.66	301.90	259.69	**1,865.67**
Per-capita Expenditure	3,972.34	2,045.82	4,256.55	2,712.57	2,831.20	2,824.39	**2,953.70**

Further, it is important to note that county and sub-county hospitals were allocated about 20.59% of the total financial allocation to the county. These hospitals as mentioned earlier serve about 16% of the population and would need more allocation because of the referrals and scope of the services they offer. Subsequently they are centrally located, easily accessible, have specialized employees and requires sophisticated medical equipment.

If the financial allocation was standardized using the county average per-capita expenditure (KShs. 2,953.70) and the population as the main basis of need, then there was significant difference between the actual and the expected financial resource allocation per sub-county. Baringo Central and Mogotio had their actual financial allocations above the expected allocations while in the remaining sub-counties, the actual allocations were below the expected (see table 7 and figure 5). Based on the resources available and as per the budget, it could be deduced that Baringo Central and Mogotio were overfunded while the rest of the sub-counties were underfunded. The disparity of the financial allocation was so great that the sub-county with the highest financial allocation (Baringo Central) was 2.08 times that of the least funded (East Pokot). Subsequently Baringo Central was overfunded by 44.11% while East Pokot was under-funded by 30.74%. It is clear that there was an inequitable distribution of financial resources among the sub-counties.

Table 7: Standardized Allocation using average Per-capita Expenditure (KShs. Millions)

SUB-COUNTY	POPULATION	Actual Allocation	Expected Allocation	Deviation (Actual – Expected)
Mogotio	69307	275.31	204.71	**70.60**
East Pokot	151428	309.79	447.27	**(137.48)**
Baringo Central	92638	394.32	273.63	**120.69**
Koibatek	119689	324.66	353.53	**(28.86)**
Baringo North	106632	301.90	314.96	**(13.06)**
Marigat	91945	259.69	271.58	**(11.89)**
TOTAL	**631639**	**1,865.67**	**1,865.67**	**0**

Figure 5: Deviation of actual allocations from expected allocations per sub-county
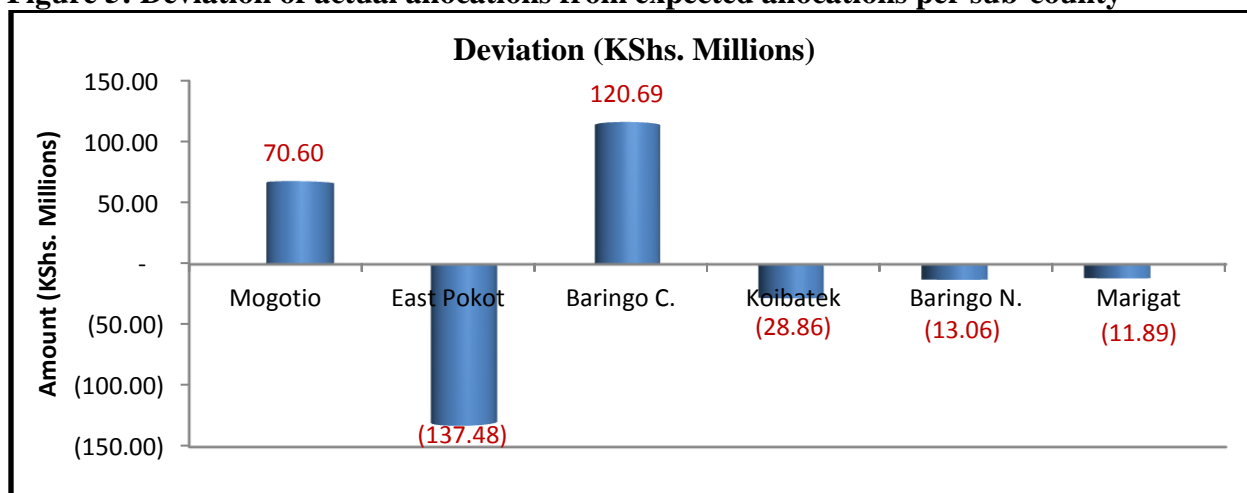
4.4.2 Distribution of Financial Resources Relative to Workload

When financial allocation was analyzed in relative to the workload, there was significant difference. The average allocation per patient for the county was KShs. 2,548.17. Three sub-counties (i.e. Marigat, East Pokot and Baringo North) were above the average while the other three (i.e. Koibatek, Mogotio and Baringo Central) were below the average. The sub-county with the least allocation per patient was Koibatek and the one with the highest was Marigat. Surprisingly, three of the sub-counties perceived disadvantaged in terms of per capita income (i.e. East Pokot, Baringo North and Marigat) were now the best off in terms of allocation per patient (see table 8). Most parts of these three sub-counties are arid, insecure and/or have far

distant facilities with some of the facilities non-functional leading to challenges of accessibility of health care services. It is only Koibatek which has been consistently disadvantaged both in terms of per capita income and per patient allocation. This calls for the use of multifactor approach in resource allocation as discussed in section 4.3.

When equity is observed and financial resources are re-distributed using workload as the only factor, the deviation of actual and expected allocation is shown in figure 6.

Table 8: Patient Allocation per sub-county

SUBCOUNTY	Mogotio	East Pokot	Baringo Central	Koibatek	Baringo North	Marigat	TOTAL/ Average
Workload	121,078	94,683	164,439	165,906	112,361	73,695	**732,162**
Actual Allocation (KShs. Millions)	275.31	309.79	394.32	324.66	301.9	259.69	**1,865.67**
Allocation per patient (KShs.)	2273.82	3271.87	2397.97	1956.89	2686.88	3523.85	**2548.17**

Figure 6: Deviation between actual and expected financial allocation per sub-county
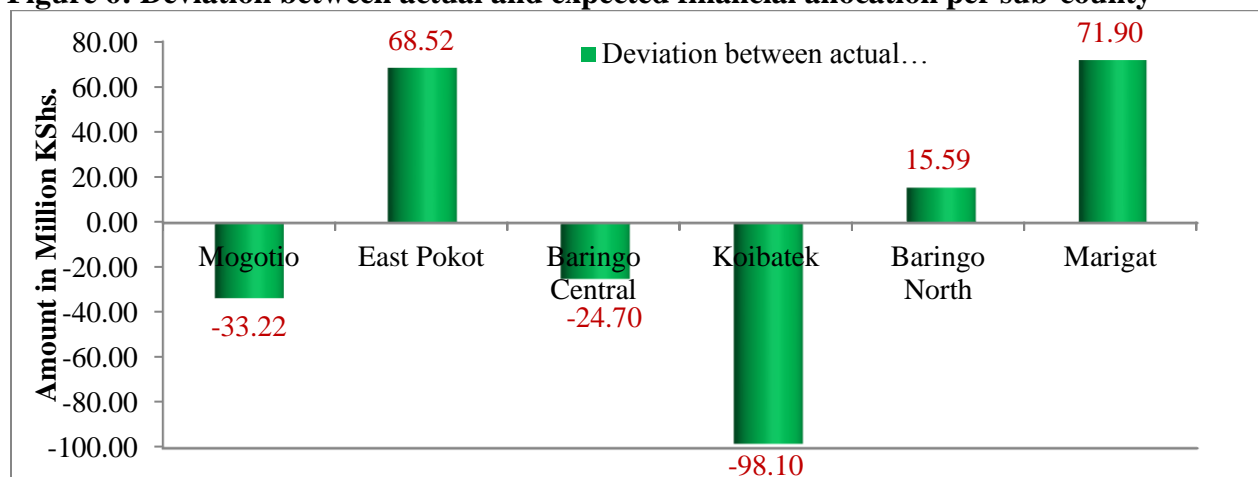
4.5 Equity in distribution of Human Resources for Health

Table 9 shows the distribution of the health human resources per sub-county. The total number of human resources is currently estimated at 969. These comprise of medical officers 32

(3.35%), nurses 550 (57.53%), clinical officers 124 (12.80%), pharmacists 8 (0.84%), dentists 6 (0.63%), public health officers/technicians 137 (14.33%), laboratory technicians 44 (4.60%), nutritionists 21 (2.20%), pharmaceutical technologists 17 (1.78%), occupational therapists 7 (0.73%), physiotherapists 4 (0.42%) and health records and information officers 19 (1.99%). Among the medical officers, there are six specialists each in general surgery, obstetrician, paediatrician, ENT surgeon, physician and pathologist. All the specialists are based in Kabarnet County hospital.

The sub-county with the highest number of the human resources wass Baringo Central with 262 (27.41%), followed by Koibatek 243 (25.08%), Baringo North 125 (12.90%), East Pokot 112 (11.72%), Mogotio 107 (11.19%), Marigat 103 (10.63%) and finally the CHMT office which had 17 (1.75%). This showed that the human resource distribution was skewed towards Baringo Central and Koibatek sub-counties. The two sub-counties have a total of 52.31% of human resources for the whole county at the expense of the other four sub-counties. However, this can only be explained when we look at the distribution of the human resources against the population and workload as discussed in sub-sections 4.5.1 and 4.5.2 respectively.

Table 9: Distribution of the Human Resources for Health in Baringo County

SUB COUNTY	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL
Mogotio	1	58	10	0	0	26	4	2	2	2	0	2	**107**
East Pokot	2	68	13	1	0	14	7	3	2	0	0	2	**112**
Baringo Central	12	163	33	1	2	25	9	5	2	3	2	5	**262**
Koibatek	10	137	37	2	3	27	9	6	4	2	2	4	**243**
Baringo North	3	66	14	1	0	26	7	3	3	0	0	2	**125**
Marigat	2	52	14	1	1	18	7	1	4	0	0	3	**103**
CHMT Office	2	6	3	2	0	1	1	1	0	0	0	1	**17**
TOTAL	**32**	**550**	**124**	**8**	**6**	**137**	**44**	**21**	**17**	**7**	**4**	**19**	**969**

Key: 1 = Medical Officers of Health (M Os/Doctors), 2 = Nurses, 3 = Clinical Officers (C Os), 4 = Pharmacists, 5 = Dentists, 6 = Public Health Officers/Technicians (PHOs/PHTs), 7 =

Laboratory Technicians, 8 = Nutritionists, 9 = Pharmaceutical Technicians, 10 = Occupational Therapists, 11 = Physiologists and 12 = Health Records and Information Officers (HRIOs).

It should be further noted that apart from the medical officers, pharmacists, dentists and may be very few nurses and the PHOs (if any) who are degree holders, most of the health staff are diploma and certificate holders. Unfortunately all the degree holders and above apart from the specialists are either health administrators at the county, sub-county and the hospitals. They therefore rarely have one on one contact with the patients and/or clients or at-least act as the mentors or directly supervise the low cadres during health service provision.

4.5.1 Distribution of Human Resources relative to Population

In this sub-section, the study sought to assess the distribution of the human resources against the population (i.e. per 100,000 people) per sub-county and also as an average for the whole county. It describes the ratio of a doctor and a nurse to the population and also the WHO recommended number of doctors and nurses and the gap or the deficit that needs to be filled.

Table 10 shows that the total average number of technical human resources for health is 149.52 staff per 100,000 people. It further shows that Baringo Central had the highest number of health staff per 100,000 people while East Pokot had the lowest. This means that there was skewed distribution of the human resources in favour of Baringo Central and Koibatek. For instance, population for East Pokot is 1.63 times that of Baringo Central while in terms of human resources for health, Baringo Central has 3.82 times the number of health staff compared to East Pokot. This distribution does not follow the law of demand and supply; in this case the technical health staff are not proportionate to the population served.

Table 10: Distribution of the Human Resources per 100,000 people

SUB COUNTY	M Os	Nurses	C Os	PHOs/PHTs	LAB TECHS	TOTAL
Mogotio	1.41	81.56	14.06	36.56	5.63	150.47
East Pokot	1.29	43.77	8.37	9.01	4.51	72.09
Baringo Central	12.63	171.50	34.72	26.30	9.47	275.66
Koibatek	8.14	111.56	30.13	21.99	7.33	197.88
Baringo North	2.74	60.33	12.80	23.76	6.40	114.25
Marigat	2.12	55.12	14.84	19.08	7.42	109.18
Average	**4.94**	**84.87**	**19.13**	**21.14**	**6.79**	**149.52**

Subsequently, the average technical staff per 100,000 people was very low compared to WHO recommended standards e.g. the actual number of doctors/medical officers and nurses per 100,000 was 4.94 and 84.87 against WHO recommendation of 21.7 and 228 respectively (see table 11). The average gap or deficit for doctors and nurses was 16.76 and 143.13 per 100,000 people respectively (see figure 9 and figure 10). This implies that medical officers were only 22.75% of the total number needed. Thus the county still needs 4.39 times the number of the current medical officers to meet the standard of the WHO. Likewise nurses were only 37.23% of the total needed; the county still needs 2.69 times the number of the current nurses to meet the standard of the WHO (see table 11, figure 7 and figure 8). In this regard, East Pokot had the highest deficit of the human resources while Baringo Central had the least deficit.

It should be further noted that nationally, Kenya has one doctor, 12 nurses and midwives per 10,000 people (MOH, 2014). This translates to 10 doctors and 120 nurses and midwives per 100,000. According to this study, the county average number of doctors, nurses and midwives per 100,000 people was approximately 5 and 85 respectively. This falls much below the average national figures. However, Baringo Central sub-county had higher number of doctors (13), nurses and midwives (172) than the national average while the rest of the sub-counties fell below with East Pokot being the "worst off."

Table 11: Available Doctors and Nurse per 100,000 people against WHO recommendations

SUB COUNTY	Mogotio	East Pokot	Baringo Central	Koibatek	Baringo North	Marigat	Average
Doctors	1.41	1.29	12.63	8.14	2.74	2.12	**4.94**
Nurses	81.56	43.77	171.5	111.56	60.33	55.12	**84.87**

Figure 7: Available Doctors against WHO recommendation
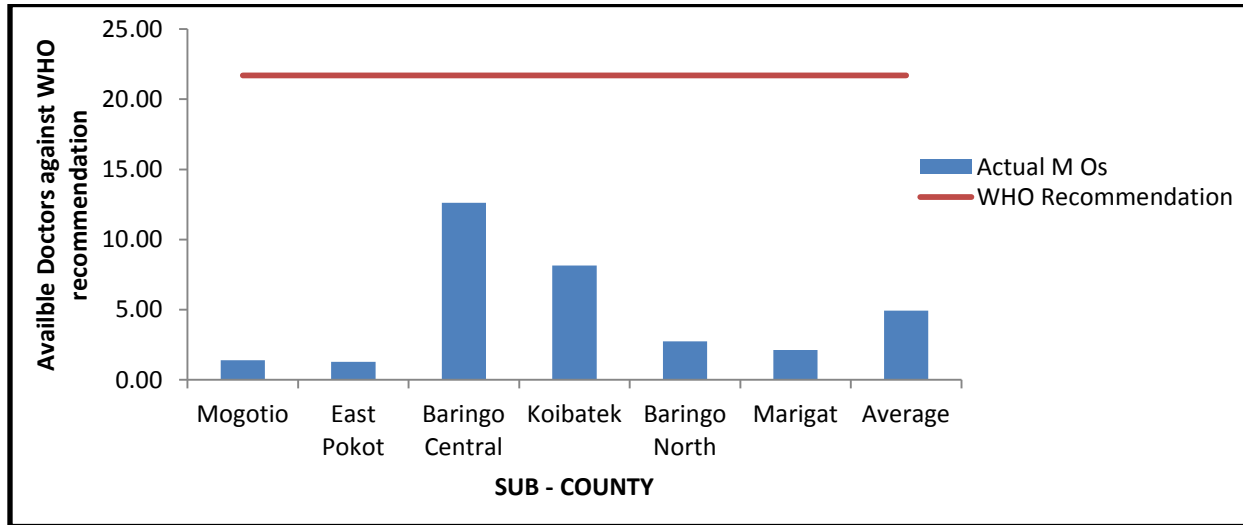
Figure 8: Available Nurses against WHO recommendation
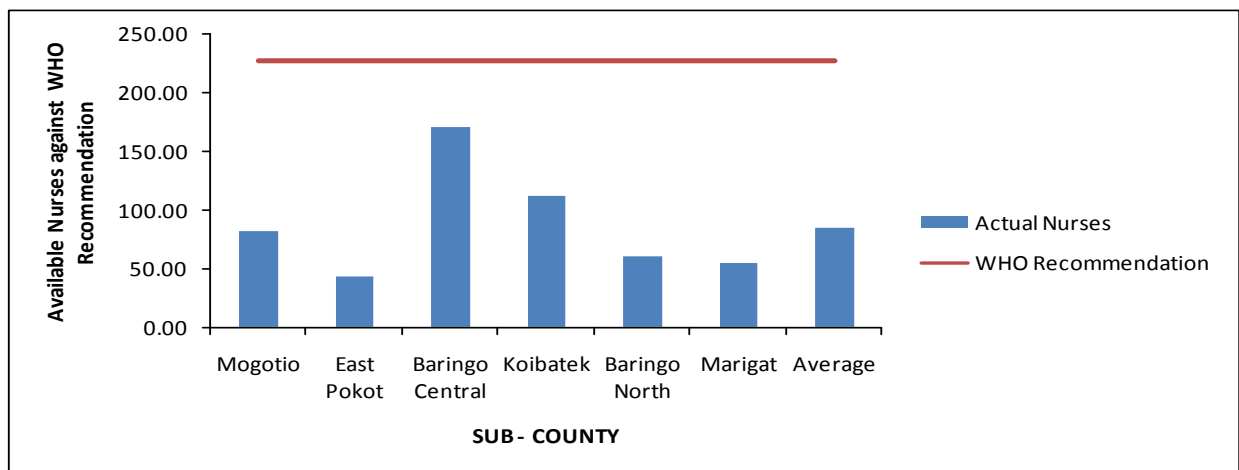
Figure 9: Number of Doctors available and the Deficit
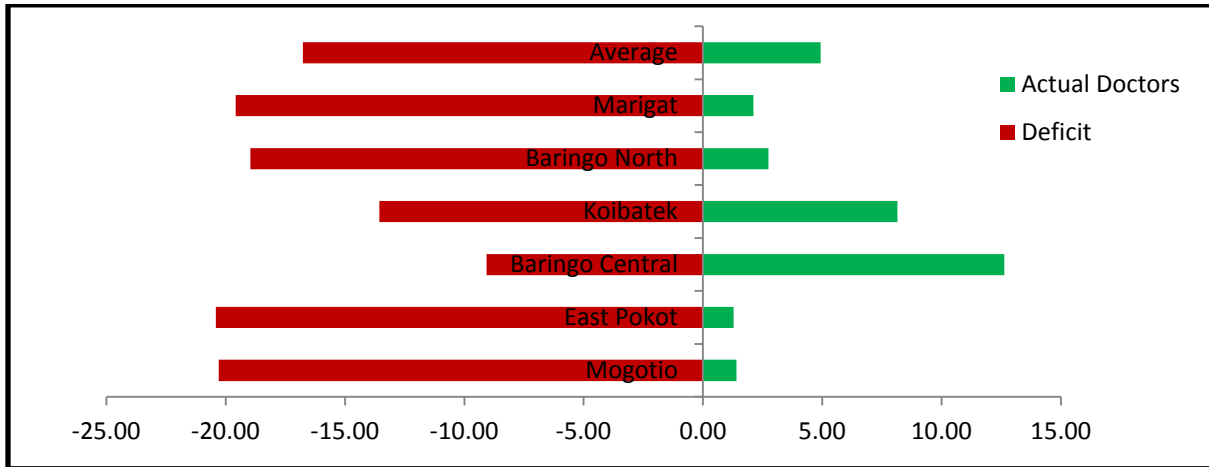
Figure 10: Number of Nurses available and the Deficit
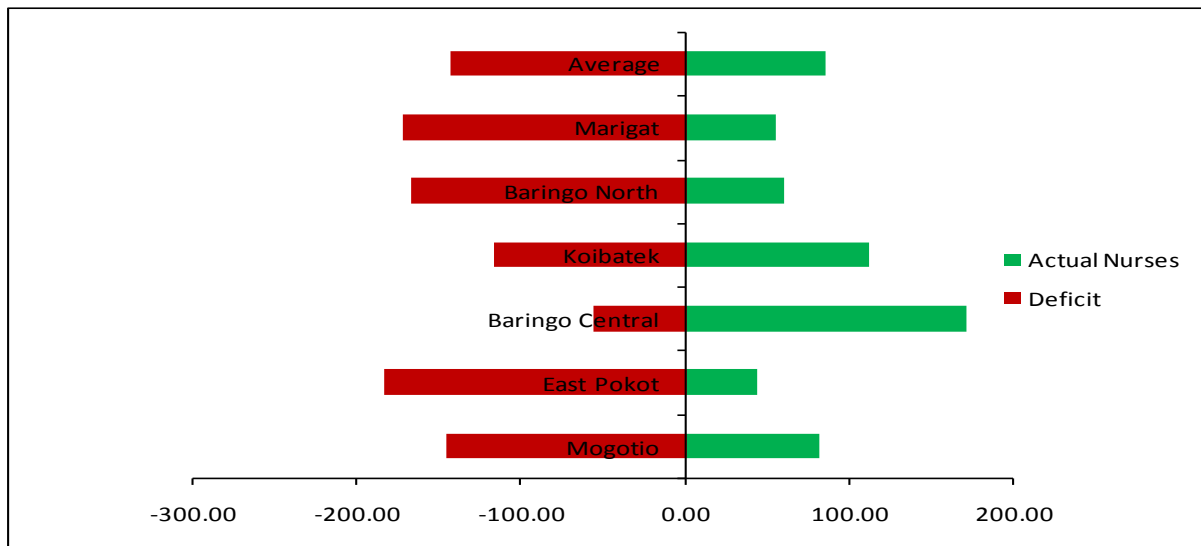
The ratio of doctors and nurses to the population was equally skewed in favour of Baringo Central and Koibatek with East Pokot being the worst off while Baringo North, Mogotio and Marigat changing positions with reference to either doctors or nurses. In general the average ratio of one doctor/medical officer and one nurse to the population was 1: 20,252 and 1: 1,178 respectively (see table 12).

Table 12: Ratio of Doctors and Nurses to the Population.

SUB COUNTY	Population	Medical Officers		Nurses	
		Number	Ratio	Number	Ratio
Mogotio	71,109	1	1:71,109	58	1:1,226
East Pokot	155,365	2	1:77,683	68	1:2,285
Baringo Central	95,046	12	1:7,921	163	1:583
Koibatek	122,801	10	1:12,280	137	1:896
Baringo North	109,405	3	1:36,468	66	1:1,658
Marigat	94,336	2	1:47,168	52	1:1,814
CHMT Office	-	2	-	6	-
TOTAL/Average	648062	32	1:20,252	550	1:1,178

4.5.2 Distribution of Human Resource relative to Workload

When the number of staff per sub-county was compared against population, it was realized that Baringo Central and East Pokot had the highest and lowest number of staff per 100, 000 people respectively. In this sub-section, the same number of staff was compared using respective workload per sub-county.

Table 13 shows the result of the number of patients per health worker per sub-county. Baringo Central and Mogotio had the lowest and the highest ratio of patients (both inpatients and outpatients) to health workers respectively. Mogotio, Baringo North and East Pokot were above the average ratio while Baringo Central, Kobatek and Marigat were below the average. This means that three sub-counties above the average ratio were "worse off" while the other three below the average ratio were "better off" in terms of distribution of the current human resources when workload is the only factor of concern.

It should be further noted that Baringo Central and Koibatek sub-counties were consistence in having the highest number of human resources in relative to population and workload. Likewise,

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Baringo North and East Pokot were consistently disadvantaged in distribution of the human resources in relation to population and workload. This is despite the many health care challenges these sub-counties experience. For Marigat and Mogotio sub-counties, they are either "worst off" or "better off" on human resources distribution in relation to population or workload. This further explains a need for multifactor approach in resource allocation and distribution.

Table 13: Number of Patients per Health Worker

SUBCOUNTY	Workload	M O	Nurse	C O	PHO/PHT	Lab Tech	Average
Mogotio	121,078	121,078	2,088	12,108	4,657	30,270	**1,223**
East Pokot	94,683	47,342	1,392	7,283	6,763	13,526	**910**
Baringo Central	164,439	13,703	1,009	4,983	6,578	18,271	**680**
Koibatek	165,906	16,591	1,211	5,185	6,145	18,434	**772**
Baringo North	112,361	37,454	1,702	11,236	4,322	16,052	**1,003**
Marigat	73,695	36,848	1,417	6,141	4,094	10,528	**810**
TOTAL/Average	**732,162**	**24,405**	**1,346**	**6,656**	**5,384**	**17,027**	**848**

4.5.3 Distribution of Nurses and Clinical Officers to dispensaries and health centres

In this sub-section, the researcher looked at the ratio of the nurses and clinical officers in reference to the dispensaries and health centres which are perceived to be serving rural population. The assumption was that rural population includes only the population served by the dispensaries and health centres and also that it is only nurses and the clinical officers who are deployed to the rural health facilities. Even-though there are referral cases to the sub-county and county hospitals, they don't constitute a large percentage. Secondly, the hospitals' catchment populations include those who seek services in the private health facilities. There is also a general perception that the rural health facilities largely serves poor, poorly educated and low socioeconomic individuals who are "disadvantaged" in access and utilization of health services.

As indicated in section 4.1.1, the catchment population for the hospitals (in this case the perceived urban population was 98,365 people). This left out 517, 266 as the population served by the rural health facilities i.e. the rural population.

Table 14 shows that the sub-county with the highest ratio of technical staff (nurses and C.Os) to the population was East Pokot while the lowest was Baringo Central. In comparison to the county average ratio of one nurse/C.O to 1,326.32 people, three sub-counties were above the average (i.e. East Pokot, Marigat and Baringo North) while the other three sub-counties were below the average (i.e. Baringo Central, Koibatek and Mogotio). Based on the available human resources and in reference to the population, there was skewed human resources distribution.

Table 14: Distribution of Nurses and C.Os with regard to Rural Population

Sub-County	Rural Population	Nurses	Nurse/Rural Pop.	C Os	C.O/Population	Nurses and C.Os	Nurse & C.O/Rural Pop
Mogotio	67,550	58	1,164.66	10	6,755.00	68	**993.38**
East Pokot	119,927	53	2,262.77	6	19,987.83	59	**2,032.66**
Baringo C.	77,741	75	1,036.55	13	5,980.08	88	**883.42**
Koibatek	83,839	73	1,148.48	13	6,449.15	86	**974.87**
Baringo N.	91,694	47	1,950.94	3	30,564.67	50	**1,833.88**
Marigat	76,515	35	2,186.14	4	19,128.75	39	**1,961.92**
TOTAL	**517,266**	**341**	**1,516.91**	**49**	**10,556.45**	**390**	**1,326.32**

Table 15 shows that the average number of rural technical staff (in this case nurses and C.Os) was 1.95 per facility. This means some facilities especially health centres may have two or more staff while dispensaries may have one staff each but at-most two staff. For the sub-counties, Marigat had the least at 0.95 staff per facility while Baringo Central had the highest number of staff at 3.83 staff per facility. This means that, among the nurses/C.Os working in the dispensaries and health centres, Baringo Central had an extra of about two nurses/C.Os per rural

health facility while Marigat had at-least a deficit of one nurse/C.O. However, only Baringo Central and Koibatek sub-counties have nurses/C.Os above county average staff per rural health facility.

Table 15: Number of Nurses/C.Os per dispensary and health centre

Sub-County	Rural Facilities	Nurses	Nurse/Rural Facility	C Os	C.O/Rural Facility	Nurses and C.Os	Nurse & C.O/Rural Facility
Mogotio	36	58	1.61	10	0.278	68	1.89
East Pokot	43	53	1.23	6	0.140	59	1.37
Baringo C.	23	75	3.26	13	0.565	88	3.83
Koibatek	27	73	2.70	13	0.481	86	3.19
Baringo N.	31	47	1.52	3	0.097	50	1.61
Marigat	40	35	0.88	4	0.100	39	0.98
TOTAL	**200**	**341**	**1.71**	**49**	**0.245**	**390**	**1.95**

It should be further noted that C Os only work in health centres and are rarely deployed in dispensaries. This further reduces the number of staff per dispensary because the fourty nine C Os will be based at the health centres leaving only nurses to be distributed to the dispensaries. Therefore, if only nurses were considered in reference to the rural facilities, the average nurse per rural health facility reduced to 1.71 with the highest being 3.26 (Baringo Central) and the lowest 0.88 (Marigat). It was still true that only Baringo Central and Koibatek sub-counties had above the average number of staff per sub-county. This trend of staff distribution wass seriously skewed towards two sub-counties and the same was alluded to by one of the SCMOH during the interviews: *"In Baringo I don't think we have shortage of staff, it is only balancing."*

When the average number of the staff per rural facility was compared with each and every sub-county, the magnitude of the mal-distribution of the staff per rural facility per sub-county is shown in figure 11.

Figure 11: Deviation of the distribution of the staff per rural facility from the average
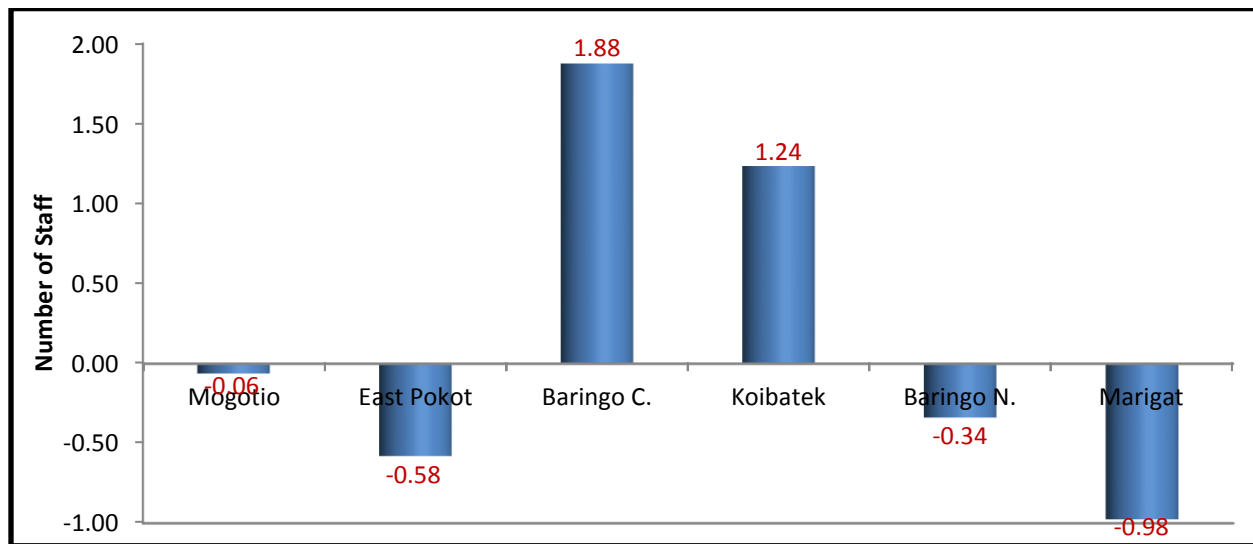
4.6 Discussion of findings relative to literature

The analysis shows that there exists great sub-county inequity in the allocation of both financial and human resources in Baringo County. It was shown that East Pokot sub-county had the highest population, the largest land area, the highest average distance to a facility but had the lowest per capita expenditure and the least health human resources per 100,000 population. Likewise, Marigat had the highest population per facility but with the least number of Nurse/C.O per rural health facility. When the human resources were analyzed relative to population, Baringo Central and Koibatek were perceived to be "better off" while Baringo North and Mogotio were considered "worse off".

East Pokot was significantly below the equity target and there was no doubt something needs to be done to improve the condition of this sub-county. Marigat is equally worse off and also raises cause of concern. It is also important to point out that these are also the sub-counties with the

lowest number of visits to a health facility per person per year implying that there is a relationship between access to health care services and allocation/distribution of health care resources. On the other hand (based on the then available health resources), some sub-counties had more health resources than what they need. Top on the list was Baringo Central with 126.14 health human resources per 100,000 population more than its expected allocation and over funded by KShs. 120.69 million. Koibatek was above its expected human resources per 100,000 population by 48.36 and Mogotio was over funded by KShs. 70.60 million. However, when the financial allocation and distribution was compared to the workload, there were significant variations among the sub-counties. Nonetheless, Koibatek was the only sub-county consistently disadvantaged both in terms of per capita income and per patient allocation.

Most of the findings in this study are consistent with several studies in literature. Studies by Bosset et al., (2003) in Columbia and Chile; (Wagstaff and Claeson (2004) across the globe; Zere et al., (2007) in Namibia; Bossert and Beauvais (2002) in Ghana, Zambia, Uganda and Phillipines and Chuma (2001) in Kenya had one fundamental finding. In all of them, there was skewed allocation of health resources in favour of regions/areas perceived to be wealthier or urban just like in the case of Baringo Central. Likewise, areas that are poor or rural and may be in greater need of the health resources were disadvantaged like East Pokot in this study. This is in line with the inverse care law. Subsequently, the needs of the population in all these studies were rarely taken into consideration.

With the existing disparities, the main question facing Baringo County health sector is *"how can equity among the sub-counties be achieved?"* Given the current state of the health sector

particularly in terms of the limited budgetary allocation and the inadequate number of the health care providers, equity can first be achieved by re-distributing the existing resources preferably using a need-based formula.

In order of this study to address its objective three and four, it looked at the re-distribution of health resources and the challenges thereof and how re-distribution can lead to equity. It also discussed health managerial capacity in anticipation of the scaling up or scaling down of the health resources. It further tries to introduce a needs- based formula and factors to consider when formulating such a formula. This is discussed in the next chapter.

CHAPTER FIVE

TOWARDS SUB-COUNTY EQUITY IN HEALTH RESOURCE DISRTIBUTION

5.0 Introduction

This chapter looked at how equity can be achieved in the health sector in Baringo County through re-distribution of the financial and human resources based on the population and workload. It presents results of interviews of the finance and health administrators and FGD with the service providers from various health facilities. It narrowed to how re-distribution process should be undertaken and the perceived or real challenges it has plus what should be incorporated in a resource allocation formula. However, it is important to point out that changes in the resource allocation process must be accompanied by policy changes as well (McIntyre et al 1997). This means that although the study attempts to make recommendations for the redistribution of the resources, it is imperative that the county government of Baringo through the health department should put appropriate policies in place if equity is to be achieved.

5.1 Resource Redistribution

If we are to move towards equity in health resources within the sub-counties, then resource redistribution is necessary. This was a general consensus among the interviewees; one of the interviewee argued that there is no understaffing in Baringo County but what needs to be done is to redistribute the health staff. He was specific when he said *"Baringo Central and Koibatek are overstaffed; the excess staff should be taken to other sub-counties."* However, the statement was just a perception and was simply pointing out that there is need for redistribution of health

resources. In reference to redistribution, one interviewee said *"Resource re-distribution will help a lot; if it is to be done, the better."*

Most interviewees did acknowledge that there is a scarcity of the resources but the resources should be used effectively and efficiently. They also noted that before reallocation or redistribution of the resources a baseline survey should be done to ascertain the needs of each sub-county and for the facilities; there should be costing of the health services. This will enable an informed decision on which resources should be re-allocated to which sub-counties. As discussed in other sections, several factors needs to be considered when redistributing resources e.g. size of the population, workload, scope of the health services offered, level of training of health care workers, medical equipment and infrastructure.

The most important is to determine the time period in which the resources should be redistributed among the sub-counties. It is equally important to assess whether sub-counties that will be having down-sizing or up-scaling of the human resources have the capacity to absorb the changes without adversely affecting the delivery of health services i.e. the pace of the redistribution should not be too rapid. However, redistribution should not take a long period of time as there will be limited visible difference in health service delivery on the ground and commitment to redistribution may decline overtime.

Redistribution process is not easy and it is expected that there may be some challenges to the process. The next sub-section presents information on the challenges that a health care resource redistribution process in Baringo is likely to face.

5.1.1 Challenges that may face a resource redistribution process

The results from the interviews and the FGDs raised the issue that a resource redistribution process may face some challenges. First, it is expected that the process is likely to face political challenges. Interviewees believed that changes in the resource allocation may lead to a decrease in budgetary allocation to sub-counties and/or reduced number of human resources in facilities which are traditionally perceived to have more resources than they need. Such sub-counties and facilities are also perceived to have strong political power base and thus they will heavily resist any move to reduce their resources. One of the health care workers interviewed said *"Some politicians don't want 'their people' to be moved from facilities where they are posted. They do believe that such staff holds political power on their behalf and they will always favour their agenda."* And one of the SCMOH retorted by saying *"Political interference is severe; we devolved everything including nepotism."* Yet another SCMOH indicated that *"majority of the administrators are from one community thereby favouring resource allocation to their regions"*.

The second challenge is the administrative favouritism which is partly due to political influence. It was said that politicians will always use the health administrators to influence recruitment and posting of the staff and this can negate on the redistribution especially human resources. One of the SCMOH interviewed though was categorical that redistribution of the available human resources is the viable way to achieve equity at-least for now, she stated that redistribution of the old staff is fine but issues begin with the new ones because they are given conditions on who to hire and who to transfer. She said *"Staff redistribution may not be easy! How can you do a human resource distribution when you are already directed on who to hire and where to send*

them?" However, one of the senior most administrators indicated that they have really tried to subdue political influence on resources allocation in the health sector.

Although it would be difficult to have a health care resources allocation that is free from political and administrative influence, the study noted that before any attempt is made to redistribute health care resources, finance/health administrators must fully be committed to achieving equity. The administrators both at the county and sub-county level must ask themselves whether equity is important to the county health sector or not. If they think that equity is important, they should mobilize those in opposition to cooperate rather than oppose their ideas.

Third challenge was geographical, infrastructure and security. The study noted that this is one of the major challenges. Some staff would even resist or reluctantly go to work in some areas like East Pokot, parts of Marigat and Baringo North. These areas are considered remote with no social amenities, no good roads, no proper means of transport and even food is a problem. One SCMOH interviewed said *"How can you deploy a lady to East Pokot where there are bandits, no food, no water and assume that she is pregnant, how will she survive?"*. He went on to say that such staff will wait until they are pregnant (and for men when they are on leave) and they will go to the higher offices and literally cry to be transferred and if they are denied a chance they simply don't report back to the facility. *"You can tell exactly that in terms of human resources allocation, ladies could not step there easily or they just step and then transferred. Once they give birth they refuse completely to go back to the facility in East Pokot."* One of the health care workers in a FGD said *"I work in a very hot and remote area of Baringo North but my family is in Kabarnet. Because there are no good schools there to take my children, I have to*

come every weekend to see my family and I have to wake up at 2AM in the morning to catch up a lorry to town and at times when my phone is off my family especially my husband is ever worried. We just survive by the grace of God."

Other challenges mentioned include: ethnicity, under reporting of health indicators, mushrooming of the health facilities and training. On ethnicity, it was noted that there is dominant of one ethnic sub group in most political and administrative positions and therefore they tend to make legislations, health policies or decisions that favour their sub-counties or regions. Under reporting of the health indicators is occasioned by lack of reporting tools and understaffing and high turnover of the health staff in some sub-counties.

There was a concern that the political class is only interested in building many health facilities but does not care about where the staff will come from. They rarely involve the health administrators at the initial stages but later they insist that a staff must be posted to "their facility" and the health department to fast-track the registration of the new facilities. This has hindered the redistribution of the staff because instead of equipping the facilities to offer quality health services, you are busy removing staff from understaffed facilities to the newly build ones yet some are closer to each other. This was captured by one SCMOH who said *"Redistribution is good but not within a sub-county. How do I redistribute human resources when in the first place I don't have enough and every time you are called to post a staff to a facility you even don't know exists and has not been registered? When you explain to them (politicians) how the process should be, they threaten you and they say that you are arrogant and don't know your roles. They then call your bosses who instructs you to do so and even suggest who to post there"*

On training, it was noted that there are some specialized services that require specific trainings to be undertaken by the health care providers but this rarely happens. Subsequently there are also frequent changes in algorithms and drug regimes of which most staff might not be conversant with. This leads to a situation where the few staff who are lucky to be trained from the rural facilities may be transferred to a sub-county hospital to offer the specialized care leaving none at his/her original facility. The community within that facility would not only enjoy the specialized services but will stay without a health care provider before a replacement is found.

From this discussion, it is clear that the main problem is that of redistributing staff to the rural areas. This therefore calls for urgent attention on how incentive mechanisms should be introduced to attract staff to the rural areas. Before any redistribution is put in place, it would be important for the county health department to assess the capacity of various sub-counties to accommodate changes in the resource allocation. On this issue one SCMOH said *"Equalization fund to be given to East Pokot and Marigat because they are 90% arid. Incentives like extra hardship allowance for those sent to East Pokot. There should also be affirmative action to also train those from East Pokot."* The next sub-section presents a brief analysis of capacity issues.

5.1.2 Absorptive Capacity of the Sub-counties

As stated earlier, one of the first considerations before redistributing resources is the capacity of under resourced sub-counties to absorb increase in budgets and that of over-resourced sub-counties to absorb budgetary cuts (McIntyre et al 1997). Capacity is mostly understood as a human resource issue i.e. availability of personnel with the specific mix of skills required to fulfill their tasks. However, capacity relates also to factors such as availability of financial

resources, information systems and the context within which health services are delivered (McIntyre et al 1999).

In this context, there are several areas that are linked to the absorptive capacity of the sub-counties. This refers to the ability of the sub-counties to down-scale/up-grade within either a decrease or increase in budgetary allocation. Of major importance is the staff and skill availability in the sub-counties that are perceived to receive large budgetary increase like East Pokot and Marigat. Before receiving any budgetary increase, it would be important for the health department to assess whether staff in these sub-counties have the right skills to plan, budget and allocate funds to the intended services. For example, the under-resourced sub-counties have poor physical infrastructure. Development of physical infrastructure in these sub-counties is important because it acts as an incentive to allocate staff in the under-resourced sub-counties.

In addition to budgetary and planning skills, it is important to consider the institutional context in which redistribution is done. For example, the tendering process of development budget is complicated within a centralized public institutional context. As a result, urban areas are in a better position to receive their development allocation earlier than the rural areas. In the context of the task network, most rural areas have limited access. Such a situation makes it difficult for the health officials in the rural areas to communicate any health information within the right time frame. This means the public in these areas have limited access to information on issues regarding good health service delivery. On the other hand, urban areas have good access to information. This has been made possible by the introduction of modern technologies in these areas. A good redistribution process should therefore provide modern communication facilities in rural areas and ensure that the tendering and procurement process is made simpler such that all

the sub-counties are in equal position to acquire development budgetary allocation within the right period of time.

It is further important to consider the issues of time and period of redistribution. This implies that a good redistribution process should be able to take into account the right time frame in which each sub-county will be equipped to absorb the increase/decrease of the resources. If redistribution is done within a short period of time it is likely that it will affect the delivery of health care services. For example, additional budgetary allocations to the under-resourced sub-counties may not be absorbed into the services for which they are intended because it takes time to create new facilities to re-allocate the personnel. As a result spending could occur on services which are not of the highest priority and the poor sub-counties could have a surplus at the end of a fiscal year, while the richer sub-counties experience deficits. This further highlights the importance of capacity in the redistribution of the resources.

To be able to deal with the problem of capacity, it would be important for the health department to implement smaller changes in the first years of redistribution. These small changes of the budgetary allocation could be put into training staff with management, planning and budgeting skills and in other capacity related areas as well.

Subsequently, in view of all these challenges including capacity building, the study notes that legislations and health policies towards equity should be put in place first so as to give a legal standing when allocating resources. Even-though some of the interviewees were skeptical about a political class agreeing on a resource allocation formula, they agreed that it would be the best

option to ensure equity in distribution of financial resources to the sub-counties. However, few interviewees voiced their reservation that the formula may favour some sub-counties if it is through a legislative process. The subsequent section will look at the resource allocation formula.

5.2 Using a need based resource allocation formula

Various issues arose from the analysis presented in chapter four. One of the major issues is the large disparity in per capita health expenditure. Having quantified the inequities existing in the Baringo County's health sector, it is evident that something needs to be done if the county is to move towards health equity within its sub-counties. However, with the limited health resources, an increase in demand of health services and the political interferences in resources allocation and redistribution, equity may not be achieved by having blanket increase of the resources but through a well defined and legal criterion. This criterion is a need based resources allocation formula adopted from the RAWP of the England.

While such a formula may not address all the limitations of the existing resources allocation process, it is hoped that it will help to structure an appropriate resources allocation formula. It should also be noted that; the use of systematic formulae for allocating funds offers the best prospect of satisfying equity criteria (Smith, 2008). As discussed in chapter one, the Kenyan national government currently uses a formula to allocate revenue to the counties and therefore it is not a new thing. However, the scope of the study is only on the health department of Baringo County and therefore the need based formula in this study is considered at a micro-level.

One of the critical issues of developing a formula is identification of appropriate indicators of need for health services. This tells us that the first step in developing a need based formula is to identify the indicators of health need suitable in Baringo county situation. These indictors have been discussed in section 4.3. In sub-sections 4.4.1 and 4.4.2, redistribution of the financial resources in reference to population size and workload has been assessed through standardization process. The next two sub-sections therefore discuss how redistribution of financial resources can be achieved relative to both population size and workload and how redistribution of human resources can be achieved using population size and workload separately and then both.

5.2.1 Re-distribution of financial resources using both population size and workload

Table 16 shows the redistributed financial allocation using population size and workload. Koibatek and East Pokot are disadvantaged while the rest of the sub-counties are "better off". It is further evident that distribution of financial resources is positively skewed towards Baringo Central but negatively skewed towards Koibatek and East Pokot.

Table 16: Expected and Actual financial allocation relative to population size and workload (KShs. Millions)

SUB-COUNTY	Mogotio	East Pokot	Baringo Central	Koibatek	Baringo North	Marigat	TOTAL
Actual Allocation	275.31	309.79	394.32	324.66	301.9	259.69	**1,865.67**
Expected Allocation	256.62	344.27	346.32	388.14	300.64	229.68	1865.67
Difference (Actual - Expected)	18.69	-34.48	48.00	-63.48	1.26	30.01	0.00

5.2.2 Re-distribution of human resources using population size

Table 17 shows current number and expected number of Medical Officers, Nurses and Clinical Officers per sub-county before and after redistribution using population size. It is noted that there is disparity in the number of these cadres of staff based on the population size of the sub-

counties. The proportionate percentages of the total redistributed number of the staff per sub-county were: Mogotio (90%), East Pokot (50%), Baringo Central (204%), Koibatek (140%), Baringo North (71%), and Marigat (67%). This means that redistribution of the human resources in the county would result to Baringo Central's health staff down-scaled by 104% while East Pokot would have additional 50% of the health staff.

Table 17: Number of health workers before and after redistribution using population size

SUB COUNTY	Population	Medical Officers		Nurses		Clinical Officers		TOTAL	
		Before	After	Before	After	Before	After	Before	After
Mogotio	69307	1	3	58	60	10	13	**69**	**76**
East Pokot	151428	2	7	68	131	13	29	**83**	**167**
Baringo C.	92638	12	5	163	80	33	18	**208**	**102**
Koibatek	119689	10	6	137	103	37	23	**184**	**132**
Baringo N.	106632	3	5	66	92	14	20	**83**	**117**
Marigat	91945	2	4	52	79	14	18	**68**	**101**
TOTAL	**631639**	**30**	**30**	**544**	**544**	**121**	**121**	**695**	**695**

Figure 12 shows disparities in the number of health care workers per sub-county based on population size as the factor for redistribution.

Figure 12: Disparities of the health care workers per sub-county using population size
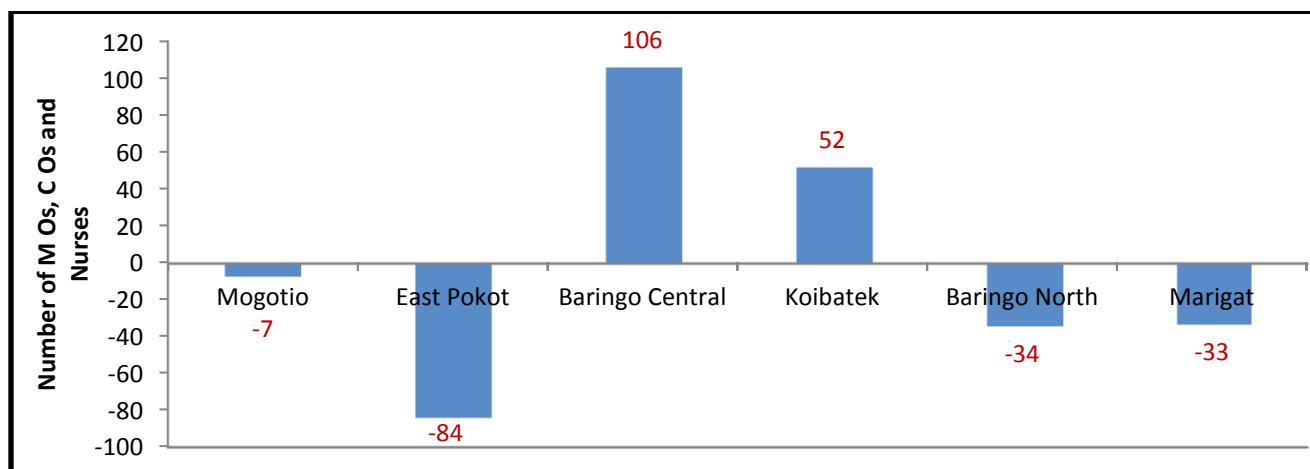
5.2.3 Re-distribution of human resources using workload

Table 18 shows the number of medical officers, nurses and clinical officers before and after redistribution using the workload while figure 13 shows disparities in the number of health workers based on workload as the factor of redistribution. It is important to note that Baringo Central and Koibatek sub-counties still have higher number of the current health workers while the rest of the sub-counties have less. The proportionate percentages of the total redistributed number of the staff per sub-county have also changed significantly: Mogotio (60%), East Pokot (92%), Baringo Central (133%), Koibatek (117%), Baringo North (78%), and Marigat (97%). This means that redistribution of the human resources in the county using workload would result to Baringo Central's health staff down-scaled by 33% while Mogotio would have additional 40% of the health staff.

It should be further be noted that there is a very big range in number of health workers needed by Mogotio, East Pokot and Marigat sub-counties when redistribution using population size and workload are compared. However, the disparity on distribution of the health workers is less when workload is used than when population size is used. This therefore justifies use of multi-factors when allocating and distributing health resources in Baringo County. Next sub-section therefore assesses redistribution of human resources based on equal proportion of the two factors, population size and workload.

Table 18: Number of health workers before and after redistribution using workload

SUB COUNTY	Workload	Medical Officers		Nurses		Clinical Officers		TOTAL	
		Before	After	Before	After	Before	After	Before	After
Mogotio	121,078	1	5	58	90	10	20	**69**	**115**
East Pokot	94,683	2	4	68	70	13	16	**83**	**90**
Baringo C.	164,439	12	7	163	122	33	27	**208**	**156**
Koibatek	165,906	10	7	137	123	37	27	**184**	**157**
Baringo N.	112,361	3	4	66	84	14	19	**83**	**107**
Marigat	73,695	2	3	52	55	14	12	**68**	**70**
TOTAL	**732,162**	**30**	**30**	**544**	**544**	**121**	**121**	**695**	**695**

Figure 13: Disparities of health care workers per sub-county using workload
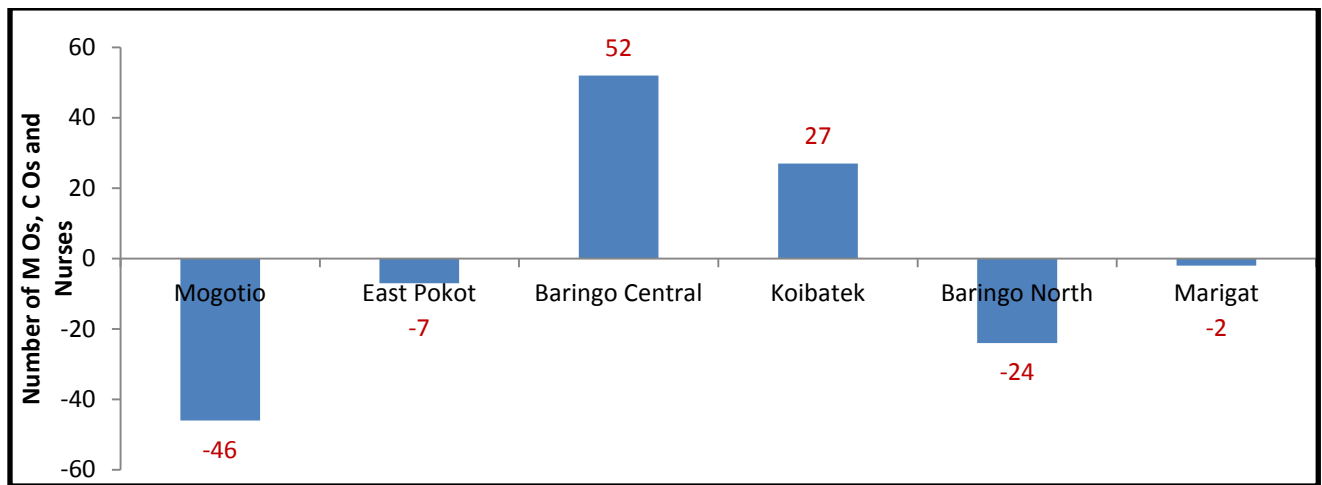
5.2.4 Re-distribution of human resources using population size and workload

When medical officers, nurses and clinical officers are redistributed using population size and workload, the result of the respective numbers of the health care workers is shown in table 19. Figure 14 also shows the disparities in the number of the three cadres of the health workers.

It is shown that Baringo Central and Koibatek sub-counties would still have higher numbers of medical officers, nurses and clinical officers while the remaining sub-counties remain disadvantaged even after redistributing the three cadres of health workers. Interestingly, Baringo Central and East Pokot would have almost equal number of medical officers, nurses and clinical

officers as opposed to the current skewed distribution where Baringo Central has 2.5 times the total number of the cadres compared to East Pokot. There is also reduction in disparity compared to when population size is the only factor used. Generally, Baringo Central and Koibatek are perceived to be favoured while the rest of the sub-counties are "disadvantaged" in human resources allocation when both population size and workload are used for analysis. However, the disparities differ in magnitude as shown in figure 15. This justifies a criteria or rather a formula to be adopted and used for resource allocation and distribution.

Table 19: Number of health workers before and after redistribution using population size and workload

SUBCOUNTY	Medical Officers		Nurses		Clinical Officers		TOTAL	
	Before	After	Before	After	Before	After	Before	After
Mogotio	1	4	58	75	10	16	**69**	**95**
East Pokot	2	6	68	100	13	23	**83**	**129**
Baringo Central	12	6	163	101	33	22	**208**	**129**
Koibatek	10	7	137	113	37	25	**184**	**145**
Baringo North	3	4	66	88	14	20	**83**	**112**
Marigat	2	3	52	67	14	15	**68**	**85**
TOTAL	**30**	**30**	**544**	**544**	**121**	**121**	**695**	**695**

Figure 14: Disparities of health care workers per sub-county using population size and workload
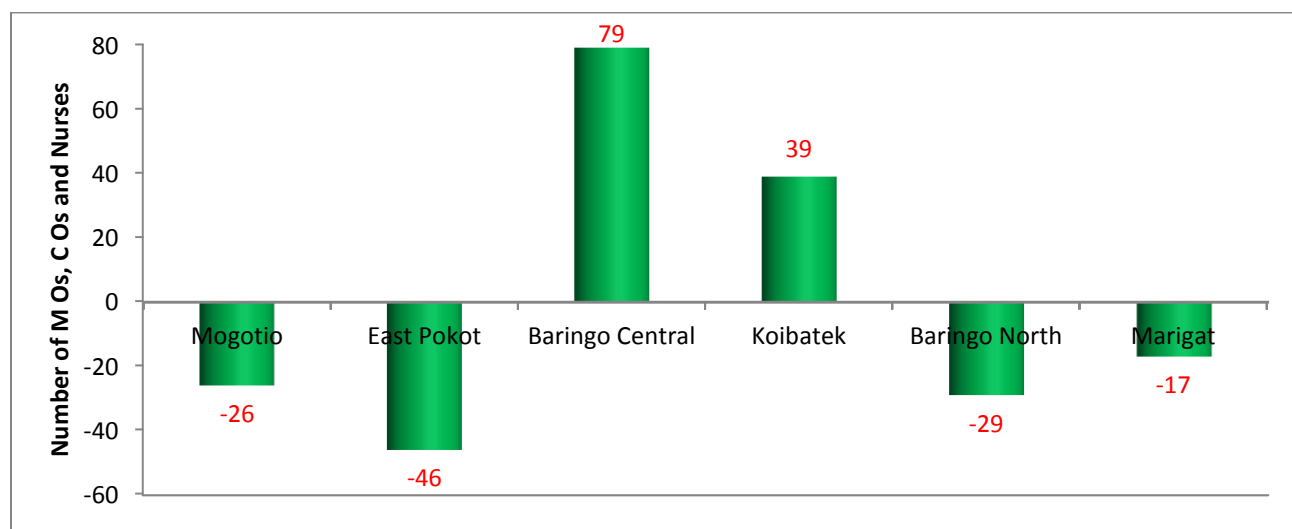
CHAPTER SIX

SUMMARY, CONCLUSION AND RECOMMENDATIONS

6.0 Introduction

This chapter summarizes the main findings of the study and also makes conclusion and recommendations thereof. Section 6.1 discusses the summary of the findings, section 6.2 looks at the conclusions, section 6.3 proposes the recommendations and finally section 6.4 proposes areas for further research.

6.1 Summary of the Findings

As stated earlier, the study adopts the definition of equity as being *"equal resources for equal need."* For the purpose of this study, resources referred to are financial and human resources for health in Baringo County. Based on the definition of equity, the study has revealed that great disparities exist in the distribution of the health care resources. The subsequent paragraphs describe the summaries of various findings.

Baringo North had the highest number of public health facilities while Marigat had the least. However, when this was compared with the population, Koibatek had the highest number of population per facility while Mogotio the least. In reference to utilization of the health services, Baringo County (with an average utilization rate of 1.30) and all the individual sub-counties falls much below the national average of 3.1.

For health budgetary making process, though it was noted that the budgetary making process was followed as per the public finance act of 2012, equity in resource allocation was not observed. However, there was a general agreement among the interviewee that the process for resource allocation in the health department has no criteria but is mostly politically influenced. It was also noted that many stakeholders including the community and the health service providers were rarely actively involved in the budget making process

There was no laid down policy, criterion or formula to allocate health resources either to the sub-counties, health facilities or health programmes. However, several factors were mentioned to be considered when allocating and distributing health resources. These includes: population size, population structure, workload, type of facility & services offered, level of training & specialization, socio-economic status, land mass, infrastructure, influx index among others. There was general agreement among the interviewee that need based resources allocation formula should include six (6) components in order of: *"Population size; Workload; land mass, 'terrain' and infrastructure; socio-economic status (poverty index); type and number of facilities and finally other indicators."*Other indicators include: health indicators, population structure, capacity building in terms of training, affirmative action for marginalized areas and population influx (influx index).

For health care expenditure and financial distribution, it was deduced that for the financial year 2014/2015, the recurrent expenditure was about 76.65% of the total expenditure leaving only 23.35% for development. Baringo Central received the highest financial allocation while Marigat the least. When the expenditure was compared to the population, Baringo Central still had the

highest per capita expenditure while East Pokot had the least per capita expenditure. This showed a very high disparity between the highest and the lowest sub-counties per capita expenditure; Baringo Central's per capita expenditure was 2.08 (208%) times that of East Pokot. Subsequently when compared to average expenditure, Baringo Central was 44.11% higher while that of East Pokot was 30.74% lower. When distribution of financial resources was analyzed against the workload, the sub-county with the least allocation per patient was Koibatek and the one with the highest was Marigat. Surprisingly, three of the sub-counties perceived disadvantaged in terms of per capita income (i.e. East Pokot, Baringo North and Marigat) were the better off in terms of allocation of finances per patient. When both population size and workload were used, Koibatek and East Pokot sub-counties received less than expected hence disadvantaged.

For the distribution of the human resources, there was mal-distribution of the human resources among the sub-counties. Baringo Central had the highest number of health workers while Marigat had the least. When this was compared with the population, Baringo Central still had the highest number of health staff per 100,000 population while East Pokot had the least. When workload was used for comparison, Baringo Central still had the highest number ratio while Mogotio the least. In general, when both the population size and workload were factored in, there was skewed distribution of human resources in favour of Baringo Central and Koibatek at the disadvantage of the rest of the sub-counties.

Rural population is usually the most disadvantaged in terms of accessibility of health care services. When the number of nurses/C.Os are compared to the rural population served, Baringo

Central and Marigat were the "better off" and the "worst off" respectively. In comparison with the average number of nurses/C.Os per rural health facility, Baringo Central had 1.88 extra staffs per facility while Marigat had a deficit of exactly one (1) staff per facility. In general, only Baringo Central and Koibatek sub-counties had nurses/C.Os per rural health facility above the average.

In general, when both population size and workload were used as factors for health resources distribution, Baringo Central sub-county was the only favoured sub-county. The resource allocation disparities therefore call for immediate action from both planners and policy makers to redistribute the health resources. It is imperative that redistribution of financial resources be accompanied by redistribution of human resources for health since a large percentage of health care expenditure is used to pay staff salaries.

6.2 Conclusion

From the study, it is confirmed that there is disparity of both financial and human resources allocation/distribution among the sub-counties of Baringo County. It was shown that East Pokot sub-county had the highest population, the largest land area, the highest average distance to a facility but had the lowest per capita expenditure and the least health human resource per 100,000 population. Likewise, Marigat had the highest population per facility but with the least number of Nurse/C.O per rural health facility. On the contrary, some sub-counties (i.e. Baringo Central and Koibatek) enjoy the surplus of health resources at the expense of other sub-counties.

The study also shows that the budget making was not an all inclusive and participatory process since some stakeholders merely participated partially. It was further evident that there was no clear criterion, policy or factors to inform on budgetary making process. According to the interviewees and FGD participants, factors to be considered when allocating resources which should also inform need-based allocation formula are: population size, workload, infrastructure/land mass/'terrain', socio-economic status (poverty index), number & type of facilities, population structure, influx index among others.

Focusing on the total health budgetary allocation, the study identified that the amount available to the health sector is determined by the financial/treasury department of the county through the county assembly and through a "fair" competition with other sectors in the economy. This tells us that despite the fact that quality health care is very important and a right under the Kenyan constitution, the health sector has equal chances with other sectors in the economy.

A factor raised from the study is the role of politics in the resource allocation process. Results from the interviews and FGDs showed that there is a high possibility of the budgetary allocations being altered to suit the requirements of strong political leaders. Due to strong political influence on resource allocation, it would be difficult to develop equity in distribution of resources. This issue, therefore, calls for urgent attention from planners and policy makers to come up with a new approach to resource allocation, hence, the proposed needs-based resources allocation formula.

For equity to be achieved the current health resources must be redistributed using a need based formula. Likewise, subsequent health resources must be distributed using the same formula. It is imperative that the county government of Baringo develops a need based formula based on the factors mentioned earlier and use it to distribute and allocate resources equitably.

6.3 Recommendations

Based on the analysis and the discussion of the findings in the succeeding chapters and articles, the study proposes the following recommendations:

i) There should be redistribution of the available financial and human resources to health among the sub-counties. This is evident by disparities in the distribution of the health resources.

ii) Redistribution of resources should be done gradually and within a practical period of time preferably within five years to enable the sub-counties to develop absorptive capacity on changes of budgetary allocations.

iii) Correct, accurate and timely data on population size, population structure, socio-economic status, workload, health care workers, financial allocations, health staff qualifications and trainings, health indicators (like morbidity and mortality), health service consumption rate among other health related information needs to be available all the time and if necessary corrected regularly. This is because the data forms the basis of resource allocation.

iv) The health department should ensure that all stakeholders for example sub-county health administrators and health workers especially facility in-charges participate in the budget making and resource allocation processes.

6.4 Further Research

For further research in the area, the study recommends the following:

i) This study concentrated on the supply side of health services and not demand's side. It would be therefore prudent to do a similar study that includes the health service consumers. Health service consumers are important because they demand for health services hence the need.

ii) It is important to carry out a research on the capacity of the sub-counties. This is important because it helps in informing the health department on the actions to take towards developing capacity at the sub-county level.

iii) The study concentrated on health resource distribution among the sub-counties of Baringo County only. Since health is a right and each and every county has its uniqueness, it would be prudent to do the same study in more counties so as to compare health resources distribution among the Kenyan counties. This will inform a more general conclusion on health equity in the whole country.

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APPENDICES

APPENDIX 1: PERMISSION TO CONDUCT RESEARCH

REPUBLIC OF KENYA

BARINGO COUNTY GOVERNMENT

Tel/Fax: 053021077

Email kimengichchp@gmail.com

Baringo County Government,

P.O. BOX 53-30400,

KABARNET

OFFICE OF THE DIRECTOR (PUBLIC SERVICE) & HUMAN RESOURCE & ADMINISTRATION

REF: BCG/CS/RES/100/VOL.I/11

DATE 6TH OCTOBER, 2015

07 OCT 2015

The Chief Officer,

Dept. of Health Services,

P.O. Box 53-30400,

KABARNET

BARINGO COUNTY

Noted
The student shall be facilitated
to obtain information sought as
much as is practicable.

7/18/15

Dear Sir/Madam,

REF: PERMISSION TO CONDUCT RESEARCH

This is to certify that **OTIENO MOSES OMONDI REG. NO. X53/68153/2013** is a student of Nairobi University, pursuing a masters in science in Health Economics and Policy.

He is currently working on his research paper entitled; **Resource Allocation to Health** at the County level: An implication for Equity, "A case study of Baringo County".

Kindly accord him the necessary assistance.

Yours Faithfully,

DIRECTOR
PUBLIC SERVICE H.R.M.
BARINGO COUNTY

Paul K. Chesang

Sign...

DIRECTOR PUBLIC SERVICE – HRM & ADMINISTRATION

APPENDIX 2: CONSENT FORM

Introduction

I am Moses Otieno, a Masters Student in University of Nairobi undertaking Masters in Health Economics and Policy. I am currently working on my project entitled "Resource Allocation to Health at the County Level and Implications for Equity, a case study of Baringo County".

You are requested to participate in this study whose purpose is to evaluate the process of resource allocation in Baringo County and its implication to equity. Your participation in this research will involve giving information on your roles, understanding, knowledge and perception on resource allocation/distribution to health and budgetary process. Consequently, the research also involves specific health indicators and the challenges you experience in your daily duties as far as resource distribution is concerned.

Risks and Potential benefits

There is no known risk associated with this research. The results of this research will help in understanding resource allocation to various sub-counties in Baringo and how this affects delivery of quality services and recommend possible and practical solutions to this. It can also be used to advocate for policy changes in the allocation and management of resources in the healthcare sector.

Privacy and Confidentiality

Your privacy shall be protected during and after the research. Your identity may only be known to the research team and shall not be revealed in any publication resulting from this research.

Voluntary Participation

Your participation in this research is voluntary. You may choose not to participate and you may withdraw your consent to participate at any time.

Contact Information

If you have any question or concern about this research or if any problem arises, please contact **Moses Otieno on 0722 348545.**

Participants' Signature………………………………….. Date…………………………..

APPENDIX 3: SEMI-STRUCTURE QUESTIONS

1. Which position do you hold and what are your responsibilities?
2. Have you or do you participate in the budget making process at the county? Explain.
3. When allocating resources to health, which criteria do you follow?
4. What determines amount of resources available in health department?
5. How do you make decisions on the distribution of resources among different sub-counties?
6. Is the level of expenditure always equal to the amount budgeted? If not, what causes the imbalances?
7. Are there factors that constrain (health) resource allocation? Explain.
8. In your opinion what do you think should be put into consideration when allocating and/or distributing (health) resources?
9. What do you understand by the term equity?
10. In your opinion, is there or has there been equity in allocation and/or distribution of (health) resources at the county level? Explain.
11. In a scale of 1 – 10, how would you rate the extent of distribution of resources at the county/sub-county level?
12. In a scale of 1 – 10, how would you rate the quality of health services at your county/sub-county or facility?
13. Explain the extent to which resource distribution has impacted the quality of health services at your county/sub-county or facility.
14. Do you think there is need for health resources re-distribution? If yes, what factors may constrain re-distribution?
15. Do you consider adopting a needs-based formula? What are the challenges of such a system?
16. Kindly provide me with information on the budgetary allocation to health department both at the county and sub-county levels. Also provide me with the information of the health human resources at the county/sub-county and their designations.

APPENDIX 4A: HEALTH RESOURCE CHECK-LIST

Sub-County …………………………………

Population Size	
Catchment Population	
OPD/In patient (2013/2014)	
Catchment population for sub-county hospital	
Health Personnel	**Numbers**
Doctors	
Pharmacists	
Dentists	
Nurses	
Clinical Officers	
Public Health Officers/Technicians	
Laboratory Technologists/Technicians	
Nutritionists	
Pharmaceutical Technicians	
Occupational Therapists	
Physiotherapists	
Others (specify)	
Sources of Funding (FY 2013/2014	**Amount (KShs.)**
County/National Government	
HSSF (MOH, World Bank and DANIDA)	
CDF	
Others (specify)	

APPENDIX 4B: HEALTH INDICATORS

Sub-County ..…………………………………………………..

Health Indicators	Target	Achievement	Performance %
Fully Immunized			
Deliveries			
4ANC			
Family Planning			
Infant Mortality	0		

APPENDIX 5: A MAP SHOWING DISTRIBUTION OF HEALTH FACILITIES IN BARINGO COUNTY.
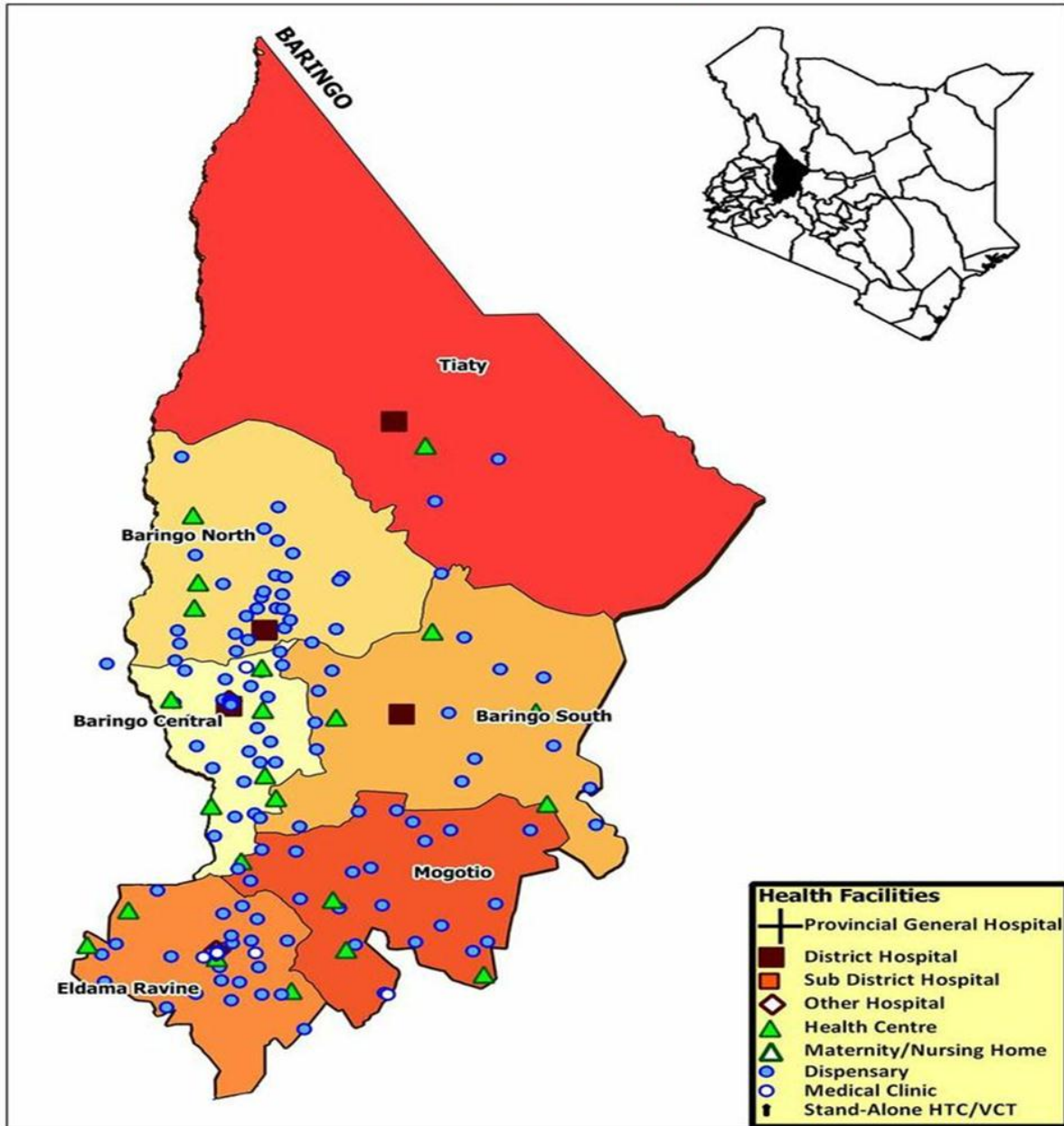
Source: Baringo County Government: Department of Health Services.

APPENDIX 6:

BUDGETARY ALLOCATION FOR DEVELOPMENT AND RECURRENT EXPENDITURE

DEVELOPMENT EXPENDITURE:

BARINGO CENTRAL

Item/Description	Amount (KShs.)
Kabarnet Hospital - New ward block- with conference halls - Phase 1	45,000,000.00
Kabarnet Hospital - Doctors and other critical staff housing units within the hospital-Phase one	12,000,000.00
KabarnetHosp Fencing the hospital-stone walling-Phase one + Lighting systems-Flood-lights	5,000,000.00
Kabarnet Hospital - Construction of New Placenta Pit	1,500,000.00
KabarnetHosp Asbestos roof replacement + Disability access way+Major works repair (borehole)	3,000,000.00
Completion of ongoing - spill over 2013/2014 Devt Projects - 2 projects	4,000,000.00
Rehabilitation of Sewerage and Lagoon at Kabarnet phase 2	5,000,000.00
Upgrading dispensaries to offer laboratory services 5 dispensaries per ward@500k per ward	2,500,000.00
Construction/ Upgrading of Dispensaries at Ksh. 5 Million per Ward - 30 wards	25,000,000.00
TOTAL	**103,000,000.00**

BARINGO NORTH

Item/Description	Amount (KShs.)
Kabartonjo Hospital Surgical ward	5,000,000.00
Kabartonjo Hospital - fencing, renovation of wards, staff houses,	10,000,000.00
Completion of ongoing - spill over 2013/2014 Devt Projects - 2 projects	4,000,000.00
Upgrading dispensaries to offer laboratory services 5 dispensaries per ward@500k per ward	2,500,000.00
Construction/ Upgrading of Dispensaries at KShs. 5 Million per Ward - 5 wards	25,000,000.00
TOTAL	**46,500,000.00**

KOIBATEK

Item/Description	Amount (KShs.)
Eldama Ravine - casualty block phase 1 + OPD extension Xray, Lab and pharmacy	25,000,000.00
Eldama Ravine - incinerator, mortuary walk way, fencing, tarmarking and parking section	12,000,000.00
Eldama Ravine - Renovation of all existing buildings including staff houses at the hosp	5,000,000.00
Completion of ongoing - spill over 2013/2014 Devt Projects - 2 projects	4,000,000.00
Upgrading dispensaries to offer laboratory services 6 dispensaries per ward@500k per ward	3,000,000.00
Construction/ Upgrading of Dispensaries at Ksh. 5 Million per Ward - 6 wards	30,000,000.00
TOTAL	**79,000,000.00**

MOGOTIO

Item/Description	Amount (KShs.)
Construction of Mogotio Hospital - Phase 2	20,000,000.00
Emining Theatre completion and equipping Phase 2	12,000,000.00
Completion of stalled ESP health Centres - Mumbres	3,000,000.00
Completion of stalled ESP health Centres - Olkokwe	3,000,000.00
Completion of ongoing - spill over 2013/2014 Devt Projects - 1 project	2,000,000.00
Upgrading dispensaries to offer laboratory services 3 dispensaries per ward@500k per ward	1,500,000.00
DHMT Administration blocks Mogotio hospitals - phase 1	3,500,000.00
Construction/ Upgrading of Dispensaries at KShs. 5 Million per Ward - 3 wards	15,000,000.00
TOTAL	**60,000,000.00**

MARIGAT

Item/Description	Amount (Kshs)
Marigat Hospital - new site - Casualty, fencing, 4 staff houses	20,000,000.00
Marigat Hospital incinerator, septic tank, lab renovations	5,000,000.00
Marigat Hospital - theatre construction - Phase 1	9,000,000.00
Completion of stalled ESP health Centres - Mochongoi	3,000,000.00
Completion of ongoing - spill over 2013/2014 Devt Projects - 1 project	2,000,000.00
Upgrading dispensaries to offer laboratory services 4 dispensaries per ward@500k per ward	2,000,000.00
Construction/ Upgrading of Dispensaries at KShs. 5 Million per Ward - 4 wards	20,000,000.00
TOTAL	**61,000,000.00**

EAST POKOT

Item/Description	Amount (KShs.)
Chemolingot Modern casualty for Pharmacy, Lab, X-ray block + - phase 1	18,000,000.00
Chemolingot Hospital - fencing, 2 wards (Maternity and Male ward), asbestos roof replacement	15,000,000.00
Chemolingot Hospital - placenta pit + Gate bridge + septic tank+ incinerator	6,000,000.00
Completion of ongoing - spill over 2013/2014 Devt Projects - 2 projects	4,000,000.00
Upgrading dispensaries to offer laboratory services 7 dispensaries per ward@500k per ward	3,500,000.00
DHMT Administration blocks Chemolingot hospitals - phase 1	3,500,000.00
Construction/ Upgrading of Dispensaries at KShs. 5 Million per Ward - 7 wards	35,000,000.00
TOTAL	**85,000,000.00**

GRAND TOTAL	**434,500,000.00**

RECURRENT EXPENDITURE:

BARINGO CENTRAL

Item/Description	Amount (KShs.)
Salaries and allowances	109,969,920
Electricity Supply & Bills - all RHFs (29*15k) + 1 Hospital (1*150k)	585,000
Water Charges- all RHFs(10k*29)+hospitals(1*25K)	315,000
Telephone, Mobile Services all RHFs(10k*29)+hospitals (1*25K)+Adm(50K*2)	415,000
Postage & Courier Services	78,333
Travelling and Substance	1,158,333
Accommodation& Domestic Travelling	508,833
Ambulance repatriation allowances - HWs	333,333
Board Allowance	200,000
Printing -stationeries, cartridges, tonners, pens etc	238,333
Adverts, Awareness and Public Campaigns –Programmes(HIV, TB, Malaria)	1,666,667
Trade Shows & Exhibitions	75,000
Training Expenses	250,000
Catering Services - food rations, other caterings - all Health centres + Hospitals	1,541,667
Group Personal Insurance	436,667
Vehicle Insurances	300,000
Fire, Burglary, Money Insurance	66,667
Medical and Pharmaceutical Supplies	43,416,667
Medical and Pharmaceutical Supplies - lab, X-ray reagents, gas	9,250
Stationary	200,000
Computer Accessories	333,333
Sanitary/supplies and services	416,667
Uniforms and Clothing	333,333
Maintenance of Office furniture & Equipments	83,333
Maintenance of Building & Stations - Non Residential	220,000
Purchase of Furniture & Fittings/ Water Chemicals	291,667
Purchase of Computers, Printers & IT Equipments	350,000
Tools, Materials and Equipment/ Fittings - CT scan, Xray, theatre equipment	10,500,000
Purchase of ICT Networking and Comp. Equip. - all hosp and adm offices	833,333
Non - Residential Buildings (Offices, Schools, Hospital etc)	500,000
Refurbishment of Non- Residential Buildings	333,333
Pre-feasibility, Feasibility and Appraisal Studies	500,000
Drugs supplies RHFs	68,604,408
Drugs supplies Hosp	24,000,000
Lab reagents RHFs	1,400,000
Lab reagents Hospitals	8,000,000
Free Maternity (Hospital)	9,180,000
Others (e.g. newspapers, petrol, oil, vehicle repair and purchase of vehicles)	3674266.667
TOTAL	**291,318,343.67**

BARINGO NORTH

Item/Description	Amount (KShs.)
Salaries and allowances	99,306,168
Electricity Supply & Bills - all RHFs (38*15k) + 1 Hospital (1*150k)	720,000
Water Charges- all RHFs(10k*38)+hospitals(1*25K)	405,000
Telephone, Mobile Services all RHFs(10k*38)+hospitals(1*25K)+Adm(50K*1)	455,000
Postage & Courier Services	78,333
Travelling and Substance	1,158,333
Accommodations& Domestic Travelling	508,833
Ambulance repatriation allowances - HWs	333,333
Board Allowance	200,000
Printing -stationeries, cartridges, tonners, pens etc	238,333
Adverts, Awareness and Public Campaigns –Programmes (HIV, TB, Malaria)	1,666,667
Trade Shows & Exhibitions	75,000
Training Expenses	250,000
Catering Services - food rations, other caterings - all Health centres + Hospitals	1,541,667
Group Personal Insurance	436,667
Vehicle Insurances	300,000
Fire, Burglary, Money Insurance	66,667
Medical and Pharmaceutical Supplies	43,416,667
Medical and Pharmaceutical Supplies - lab, X-ray reagents, gas	9,250
Stationary	200,000
Computer Accessories	333,333
Sanitary/supplies and services	416,667
Uniforms and Clothing	333,333
Maintenance of Office furniture & Equipments	83,333
Maintenance of Building & Stations - Non Residential	220,000
Purchase of 1 Ambulances Kabartonjo	7,200,000
Purchase of Furniture & Fittings/ Water Chemicals	291,667
Purchase of Computers, Printers & IT Equipments	350,000
Tools, Materials and Equipment/ Fittings - CT scan, Xray, theatre equipment	10,500,000
Purchase of ICT Networking and Comp. Equip. - all hosp and adm offices	833,333
Non - Residential Buildings (Offices, Schools, Hospital etc)	500,000
Refurbishment of Non- Residential Buildings	333,333
Pre-feasibility, Feasibility and Appraisal Studies	500,000
Drugs supplies RHFs	63,221,672
Drugs supplies Hosp	10,000,000
Lab reagents RHFs	1,400,000.00
Lab reagents Hospitals	3,000,000.00
Free Maternity	840,000
Others (e.g. newspapers, petrol, oil, vehicle repair and purchase of vehicles)	3674266.667
TOTAL	**255,396,855.67**

KOIBATEK

Item/Description	Amount (KShs.)
Salaries and allowances	106,910,537
Electricity Supply & Bills - all RHFs (23*15k) + 1 Hospital (1*150k)	495,000
Water Charges- all RHFs(10k*23)+hospitals(1*25K)	255,000
Telephone, Mobile Services all RHFs (10k*23)+ hospitals(1*25K)+ Adm(50K*1)	305,000
Postage & Courier Services	78,333
Travelling and Substance	1,158,333
Accommodation & Domestic Travelling	508,833
Ambulance repatriation allowances - HWs	333,333
Board Allowance	200,000
Printing -stationeries, cartridges, tonners, pens etc	238,333
Adverts, Awareness and Public Campaigns –Programmes (HIV, TB, Malaria)	1,666,667
Trade Shows & Exhibitions	75,000
Training Expenses	250,000
Catering Services - food rations, other caterings - all Health centres + Hospitals	1,541,667
Group Personal Insurance	436,667
Vehicle Insurances	300,000
Fire, Burglary, Money Insurance	66,667
Medical and Pharmaceutical Supplies	43,416,667
Medical and Pharmaceutical Supplies - lab, X-ray reagents, gas	9,250
Stationary	200,000
Computer Accessories	333,333
Sanitary/supplies and services	416,667
Uniforms and Clothing	333,333
Maintenance of Office furniture & Equipments	83,333
Maintenance of Building & Stations - Non Residential	220,000
Purchase of Furniture & Fittings/ Water Chemicals	291,667
Purchase of Computers, Printers & IT Equipments	350,000
Tools, Materials and Equipment/ Fittings - CT scan, Xray, theatre equipment	10,500,000
Purchase of ICT Networking and Comp. Equip. - all hosp and adm offices	833,333
Non - Residential Buildings (Offices, Schools, Hospital etc)	500,000
Refurbishment of Non- Residential Buildings	333,333
Pre-feasibility, Feasibility and Appraisal Studies	500,000
Drugs supplies RHFs	35,750,216
Drugs supplies Hosp	20,000,000
Lab reagents RHFs	1,400,000.00
Lab reagents Hospitals	3,000,000.00
Free Maternity Hospitals	8,700,000
Others (e.g. newspapers, petrol, oil, vehicle repair and purchase of vehicles)	3674266.667
TOTAL	**245,664,768**

MOGOTIO

Item/Description	Amount (KShs.)
Salaries and allowances	85,328,508
Electricity Supply & Bills - all RHFs (26*15k) + 1 Hospital (1*150k)	540,000
Water Charges- all RHFs(10k*26)+hospitals(1*25K)	285,000
Telephone, Mobile Services all RHFs(10k*26)+hospitals(1*25K) + Adm (50K*1)	335,000
Postage & Courier Services	78,333
Travelling and Substance	1,158,333
Accommodation & Domestic Travelling	508,833
Ambulance repatriation allowances - HWs	333,333
Board Allowance	200,000
Printing -stationeries, cartridges, tonners, pens etc	238,333
Adverts, Awareness and Public Campaigns –Programmes (HIV, TB, Malaria)	1,666,667
Trade Shows & Exhibitions	75,000
Training Expenses	250,000
Catering Services - food rations, other caterings - all Health centres + Hospitals	1,541,667
Group Personal Insurance	436,667
Vehicle Insurances	300,000
Fire, Burglary, Money Insurance	66,667
Medical and Pharmaceutical Supplies	43,416,667
Medical and Pharmaceutical Supplies - lab, X-ray reagents, gas	9,250
Stationary	200,000
Computer Accessories	333,333
Sanitary/supplies and services	416,667
Uniforms and Clothing	333,333
Maintenance of Office furniture & Equipments	83,333
Maintenance of Building & Stations - Non Residential	220,000
Purchase of Ambulances Mogotio	7,200,000
Purchase of Furniture & Fittings/ Water Chemicals	291,667
Purchase of Computers, Printers & IT Equipments	350,000
Tools, Materials and Equipment/ Fittings - CT scan, Xray, theatre equipment	10,500,000
Purchase of ICT Networking and Comp. Equip. - all hosp and adm offices	833,333
Non - Residential Buildings (Offices, Schools, Hospital etc)	500,000
Refurbishment of Non- Residential Buildings	333,333
Pre-feasibility, Feasibility and Appraisal Studies	500,000
Drugs supplies RHFs	45,373,196
Drugs supplies Hosp	5,000,000
Lab reagents RHFs	1,400,000.00
Lab reagents Hospitals	1,000,000.00
Others (e.g. newspapers, petrol, oil, vehicle repair and purchase of vehicles)	3674266.667
TOTAL	**215,310,719.67**

MARIGAT

Item/Description	Amount (KShs.)
Salaries and allowances	85,130,324
Electricity Supply & Bills - all RHFs (19*15k) + 1 Hospital (1*150k)	435,000
Water Charges- all RHFs(10k*19)+hospitals(1*25K)	215,000
Telephone, Mobile Services all RHFs(10k*19)+hospitals(1*25K) + Adm(50K*1)	265,000
Postage & Courier Services	78,333
Travelling and Substance	1,158,333
Accommodation & Domestic Travelling	508,833
Ambulance repatriation allowances - HWs	333,333
Board Allowance	200,000
Printing -stationeries, cartridges, tonners, pens etc	238,333
Adverts, Awareness and Public Campaigns –Programmes (HIV, TB, Malaria)	1,666,667
Trade Shows & Exhibitions	75,000
Training Expenses	250,000
Catering Services - food rations, other caterings - all Health centres + Hospitals	1,541,667
Group Personal Insurance	436,667
Vehicle Insurances	300,000
Fire, Burglary, Money Insurance	66,667
Medical and Pharmaceutical Supplies	43,416,667
Medical and Pharmaceutical Supplies - lab, X-ray reagents, gas	9,250
Stationary	200,000
Computer Accessories	333,333
Sanitary/supplies and services	416,667
Uniforms and Clothing	333,333
Maintenance of Office furniture & Equipments	83,333
Maintenance of Building & Stations - Non Residential	220,000
Purchase of Furniture & Fittings/ Water Chemicals	291,667
Purchase of Computers, Printers & IT Equipments	350,000
Tools, Materials and Equipment/ Fittings - CT scan, Xray, theatre equipment	10,500,000
Purchase of ICT Networking and Comp. Equip. - all hosp and adm offices	833,333
Non - Residential Buildings (Offices, Schools, Hospital etc)	500,000
Refurbishment of Non- Residential Buildings	333,333
Pre-feasibility, Feasibility and Appraisal Studies	500,000
Drugs supplies RHFs	31,684,108
Drugs supplies Hosp	5,000,000
Lab reagents RHFs	1,750,000.00
Lab reagents Hospitals	2,700,000.00
Free Maternity Hospitals	2,660,000
Others (e.g. newspapers, petrol, oil, vehicle repair and purchase of vehicles)	3674266.667
TOTAL	**198,688,448**

EAST POKOT

Item/Description	Amount (Kshs)
Salaries and allowances	85,897,280
Electricity Supply & Bills - all RHFs (35*15k) + 1 Hospital (1*150k)	675,000
Water Charges- all RHFs(10k*35)+hospitals(1*25K)	375,000
Telephone, Mobile Services all RHFs(10k*35)+hospitals(1*25K) + Adm (50K*1)	4,250,000
Postage & Courier Services	78,333
Travelling and Substance	1,158,333
Accommodation & Domestic Travelling	508,833
Ambulance repatriation allowances - HWs	333,333
Board Allowance	200,000
Printing -stationeries, cartridges, tonners, pens etc	238,333
Adverts, Awareness and Public Campaigns –Programmes (HIV, TB, Malaria)	1,666,667
Trade Shows & Exhibitions	75,000
Training Expenses	250,000
Catering Services - food rations, other caterings - all Health centres + Hospitals	1,541,667
Group Personal Insurance	436,667
Vehicle Insurances	300,000
Fire, Burglary, Money Insurance	66,667
Medical and Pharmaceutical Supplies	43,416,667
Medical and Pharmaceutical Supplies - lab, X-ray reagents, gas	9,250
Stationary	200,000
Computer Accessories	333,333
Sanitary/supplies and services	416,667
Uniforms and Clothing	333,333
Maintenance of Office furniture & Equipments	83,333
Maintenance of Building & Stations - Non Residential	220,000
Purchase of Furniture & Fittings/ Water Chemicals	291,667
Purchase of Computers, Printers & IT Equipments	350,000
Tools, Materials and Equipment/ Fittings - CT scan, Xray, theatre equipment	10,500,000
Purchase of ICT Networking and Comp. Equip. - all hosp and adm offices	833,333
Non - Residential Buildings (Offices, Schools, Hospital etc)	500,000
Refurbishment of Non- Residential Buildings	333,333
Pre-feasibility, Feasibility and Appraisal Studies	500,000
Drugs supplies RHFs	55,668,444
Drugs supplies Hosp	5,000,000
Lab reagents RHFs	1,400,000.00
Lab reagents Hospitals	1,700,000.00
Free Maternity Hospitals	980,000
Others (e.g. newspapers, petrol, oil, vehicle repair and purchase of vehicles)	3674266.667
TOTAL	**224,794,740**
GRAND TOTAL	**1,431,173,875**

Source: Adapted from Baringo County Government: Department of Health Services.
NB: Some of the current expenditures were assumed to be distributed equally to the sub-counties because budgetary making process did not factor in the sub-counties.

APPENDIX 7: BARINGO COUNTY HEALTH FACILITIES AS AT AUGUST 2014

SUB-COUNTY	MFL	Facility Name	Type	Owner	No.
KOIBATEK	19321	Alpha Medical Clinic (Koibatek)	Medical Clinic	Private Practice - Nurse / Midwife	1
	14211	Arama	Dispensary	Ministry of Health	2
	20436	Chemasusu	Dispensary	Ministry of Health	3
	14964	Eldama Ravine (AIC)	Health Centre	Christian Health Association of Kenya	4
	14432	Eldama Ravine District	Hospital	Ministry of Health	5
	19324	Eldama Ravine Medical Centre	Medical Clinic	Private Practice - Clinical Officer	6
	19322	Eldama Ravine Nursing Home	Nursing Home	Private Practice - Clinical Officer	7
	14474	Equator	Health Centre	Ministry of Health	8
	14477	Esageri	Health Centre	Ministry of Health	9
	19383	Hillview Park Medical Clinic	Medical Clinic	Private Practice - General Practitioner	10
	14557	Igure	Dispensary	Ministry of Health	11
	14619	Kabimoi	Dispensary	Ministry of Health	12
	17087	Kabiyet	Dispensary	Ministry of Health	13
	15481	Karen Roses	Dispensary	Private Enterprise (Institution)	14
	17088	Kibias	Dispensary	Ministry of Health	15
	17154	Kiplombe	Dispensary	Ministry of Health	16
	14933	Kiptuno	Dispensary	Ministry of Health	17
	15016	Lebolos	Dispensary	Ministry of Health	18
	15111	MajiMazuri	Dispensary	Ministry of Health	19
	15174	Mercy Hospital	Other Hospital	FBO	20
	20433	Muserechi	Dispensary	Ministry of Health	21
	17084	Nakurtakwei	Dispensary	Ministry of Health	22
	19323	Nazareth Medical Clinic	Medical Clinic	Private Practice - Clinical Officer	23
	18592	Ravine Glory Health Care Services	Medical Clinic	Private Practice - Clinical Officer	24
	19384	Ravine Medical and ENT Clinic	Medical Clinic	Private Practice - Clinical Officer	25
	15505	Sabatia	Dispensary	Ministry of Health	26
	15512	Sagat	Dispensary	Ministry of Health	27
	20434	Saos	Dispensary	Ministry of Health	28
	17086	Seguton	Dispensary	Ministry of Health	29
	19315	Shalom Medical Clinical	Medical Clinic	Private Practice - Clinical Officer	30
	15566	Sigoro	Dispensary	Ministry of Health	31
	17151	Simotwet	Dispensary	Ministry of Health	32
	20435	Sinonin	Dispensary	Ministry of Health	33
	15606	Solian	Dispensary	Ministry of Health	34
	15725	Timboroa	Health Centre	Ministry of Health	35
	15727	Tinet	Dispensary	Ministry of Health	36
	15733	Toniok	Dispensary	Ministry of Health	37
	15735	Torongo	Health Centre	Ministry of Health	38
	15742	Tugumoi	Dispensary	Ministry of Health	39

	14944	Kisok	Dispensary	Ministry of Health	40
	16672	Kisonei	Dispensary	Ministry of Health	41
	14953	Kituro	Health Centre	Ministry of Health	42
	15197	Mogorwa	Health Centre	Ministry of Health	43
	18363	Moi Teachers College - Baringo	Dispensary	Private dispensary	44
	18279	Mwafrika institute of development	Dispensary	NGO	45
	15346	Ngetmoi	Dispensary	Ministry of Health	46
	15382	Ochii	Dispensary	Ministry of Health	47
	15487	Riwo	Dispensary	Ministry of Health	48
	15510	Sacho School	Private Dispensary	Private dispensary	49
	15521	Salawa Catholic Mission PHC	Dispensary	NGO	50
	15522	Salawa	Health Centre	Ministry of Health	51
	15549	Seretunin	Health Centre	Ministry of Health	52
	15604	Sogon	Dispensary	Ministry of Health	53
	16673	Sorok	Dispensary	Ministry of Health	54
	15701	Talai	Dispensary	Ministry of Health	55
	15712	Tebei	Dispensary	Ministry of Health	56
	15718	Tenges	Health Centre	Ministry of Health	57
	15724	Timboiywo	Dispensary	Ministry of Health	58
	18746	Tionybei Medical Clinic	Private Medical clinic	Private medical clinic	59
	17582	A.I.C Ebenezer	Private dispensary	Private dispensary	60
BARINGO CENTRAL	17352	Barnet Memorial	Private Medical clinic	Private Clinic	61
	14246	Bekibon	Dispensary	Ministry of Health	62
	14269	Borrowonin	Dispensary	Ministry of Health	63
	14352	Cheplambus	Dispensary	Ministry of Health	64
	17018	Chesongo	Dispensary	Ministry of Health	65
	14607	Kabarnet	Hospital	Ministry of Health	66
	17492	Kabarnet Faith Clinic	Private Medical clinic	Private Clinic	67
	14608	Kabarnet High School	Private dispensary	Private Clinic	68
	17595	KabarnetWomens' Clinic	Private Medical clinic	Private Clinic	69
	14710	Kapkelelwa	Dispensary	Ministry of Health	70
	14723	Kapkole	Dispensary	Ministry of Health	71
	17019	Kapkomoi	Dispensary	Ministry of Health	72
	14729	Kapkuei	Dispensary	Ministry of Health	73
	14732	Kapkures	Dispensary	Ministry of Health	74
	14735	Kaplel	Dispensary	Ministry of Health	75
	14784	Kaptimbor	Dispensary	Ministry of Health	76
	14775	Kaptorokwa	Dispensary	Ministry of Health	77
	14811	Kasitet	Dispensary	Ministry of Health	78
	14851	Kibingor	Dispensary	Ministry of Health	79
	14855	Kiboino	Dispensary	Ministry of Health	80
	14907	Kipsacho	Dispensary	Ministry of Health	81
	14923	Kiptagich	Health Centre	Ministry of Health	82
	20476	Orokwo	Dispensary	Ministry of Health	83
	20466	Magonoi	Dispensary	Ministry of Health	84
		Kapropita Girls High School	Private	Private Dispensary	85

			dispensary		
	20478	Lelgut	Dispensary	Ministry of Health	86
	20476	Kasoiyo	Dispensary	Ministry of Health	87
BARINGO NORTH	14193	Aiyebo	Dispensary	Ministry Of Health	88
	14220	Atiar	Dispensary	Ministry Of Health	89
	14241	Bartabwa	Health Centre	Ministry Of Health	90
	14242	Bartolimo	Dispensary	Ministry Of Health	91
	14243	Barwessa	Health Centre	Ministry Of Health	92
	14270	Bossei	Dispensary	Ministry Of Health	93
	14609	Kabartonjo	Hospital	Ministry Of Health	94
	17100	Kalabata	Dispensary	Ministry Of Health	95
	14694	Kapchepkor	Dispensary	Ministry Of Health	96
	14716	Kapkiamo	Dispensary	Ministry Of Health	97
	14743	Kapluk	Dispensary	Ministry Of Health	98
	14785	Kaptiony	Dispensary	Ministry Of Health	99
	14788	Kaptum	Dispensary	Ministry Of Health	100
	14790	Kaptumin	Dispensary	Ministry Of Health	101
	14793	Kapturo	Dispensary	Ministry Of Health	102
	14810	Kasisit	Dispensary	Ministry Of Health	103
	14812	Kasok	Dispensary	Ministry Of Health	104
	14817	Katibel	Dispensary	Ministry Of Health	105
	14843	Keturwo	Health Centre	Ministry Of Health	106
	17102	Kibiryokwonin	Dispensary	Ministry Of Health	107
	14881	Kimugul	Dispensary	Ministry Of Health	108
	14888	Kinyach	Dispensary	Ministry Of Health	109
	14889	Kipcherere	Dispensary	Ministry Of Health	110
	14912	Kipsaraman	Dispensary	NGO	111
	14993	Koroto	Dispensary	Ministry Of Health	112
	14998	Kuikui	Health Centre	Ministry Of Health	113
	15036	Likwon	Dispensary	Ministry Of Health	114
	17115	Moigutwo	Dispensary	Ministry Of Health	115
	15223	Mormorio	Dispensary	Ministry Of Health	116
	15243	Muchukwo	Dispensary	Ministry Of Health	117
	15465	Poi	Dispensary	Ministry Of Health	118
	17101	Rondonin	Dispensary	Ministry Of Health	119
	15562	Sibilo	Dispensary	Ministry Of Health	120
	15684	Sumeiyon	Dispensary	Ministry Of Health	121
	17103	Sutyechun	Dispensary	Ministry Of Health	122
	15729	Tirimionin	Dispensary	Ministry Of Health	123
	15730	Tirriondonin	Dispensary	Ministry Of Health	124
	15785	Yatya	Dispensary	Ministry Of Health	125
	20353	Kasaka	Dispensary	Ministry Of Health	126
	20469	Tunoiwo	Dispensary	Ministry Of Health	127
	20474	Rebeko	Dispensary	Ministry Of Health	128
	20475	Ayatya	Dispensary	Ministry Of Health	129
	20481	Akoroyan	Dispensary	Ministry Of Health	130
	20470	Tiloi	Dispensary	Ministry Of Health	131
	20467	Kapkombe	Dispensary	Ministry Of Health	132
TIATY/EAST POKOT	17797	Plesian	Dispensary	Ministry of Health	133
	14235	Barpello	Dispensary	FBO - Catholic mission	134
	14321	Chemolingot District	Hospital	Ministry of Health	135
	16731	Chemsik	Dispensary	Ministry of Health	136
	16727	Chepkalacha	Dispensary	Ministry of Health	137
	16736	Chepturu	Dispensary	Ministry of Health	138

	16728	Chesirimion	Dispensary	Ministry of Health	139
	14392	Churo	Dispensary	Ministry of Health	140
	20047	Churo (AIC)	Health Centre	FBO - A.I.C mission	141
	16726	Kalapata	Dispensary	Ministry of Health	142
	14678	Kamurio	Dispensary	Ministry of Health	143
	16725	Kaptuya	Dispensary	Ministry of Health	144
	16737	Kapunyany	Dispensary	Ministry of Health	145
	16733	Kipnai	Dispensary	Ministry of Health	146
	14978	Kokwototo	Dispensary	Ministry of Health	147
	14979	Kolowa	Health Centre	Ministry of Health	148
	14983	Komolion	Dispensary	Ministry of Health	149
	14995	Kositei	Dispensary	FBO - Catholic mission	150
	15053	Loiwat	Dispensary	Ministry of Health	151
	20048	Lomuke	Dispensary	Ministry of Health	152
	15091	Loruk	Dispensary	Ministry of Health	153
	15141	Maron	Dispensary	Ministry of Health	154
	15249	Mukutani	Dispensary	Ministry of Health	155
	16729	Nakoko	Dispensary	Ministry of Health	156
	15347	Nginyang	Health Centre	Ministry of Health	157
	15352	Ngoron	Dispensary	Ministry of Health	158
	16732	Nyakwala	Dispensary	Ministry of Health	159
	16735	Nyaunyau	Dispensary	Ministry of Health	160
	16734	Ptigchi	Dispensary	Ministry of Health	161
	15486	Riongo	Dispensary	Ministry of Health	162
	19940	Rotu	Dispensary	Ministry of Health	163
	16730	Seretion	Dispensary	Ministry of Health	164
	15707	Tangulbei	Health Centre	Ministry of Health	165
	14473	TDMP	Dispensary	FBO - Catholic mission	166
	20457	Krezze	Dispensary	Ministry of Health	167
	20457	Akwichatis	Health Centre	Ministry of Health	168
	20458	Katungura	Dispensary	Ministry of Health	169
	20459	Loyeya	Dispensary	Ministry of Health	170
	20465	Kasilangwa	Dispensary	Ministry of Health	171
	20460	Tilingwo	Dispensary	Ministry of Health	172
	20462	Topulen	Dispensary	Ministry of Health	173
	20461	Chemoril	Dispensary	Ministry of Health	174
	20463	Chesawach	Dispensary	Ministry of Health	175
	20455	Ngaina	Dispensary	Ministry of Health	176
	20464	Kapau	Dispensary	Ministry of Health	177
MOGOTIO	14292	Cheberen	Dispensary	Ministry of Health	178
	14446	Emening	Health Centre	Ministry of Health	179
	20010	Emsos	Dispensary	Ministry of Health	180
	20007	Kabogor	Dispensary	Ministry of Health	181
	17098	Kamar	Dispensary	Ministry of Health	182
	14709	Kapkein	Dispensary	Ministry of Health	183
	20006	Kimngorom	Dispensary	Ministry of Health	184
	20009	Kimose	Dispensary	Ministry of Health	185
	17091	Kipkitur	Dispensary	Ministry of Health	186
	17099	Kipsogon	Dispensary	Ministry of Health	187
	20011	Kiptoim	Dispensary	Ministry of Health	188
	14940	Kisanana	Health Centre	Ministry of Health	189
	14968	Koitebes	Dispensary	Ministry of Health	190
	15112	Maji Moto	Dispensary	Ministry of Health	191
	15198	Mogotio	Dispensary	Ministry of Health	192

	18959	Mogotio	Private Medical Clinic	Private owned	193
	20005	Mogotio	Dispensary	Ministry of Health	194
	15215	Molok	Dispensary	Ministry of Health	195
	15216	Molos	Dispensary	Ministry of Health	196
	15217	Molosirwe	Dispensary	Ministry of Health	197
	15246	Mugurin	Dispensary	Ministry of Health	198
	17097	Ng'endalel	Dispensary	Ministry of Health	199
	15353	Ngubereti	Health Centre	Ministry of Health	200
	18960	Nogoi	Private Medical Clinic	Private owned	201
	17090	Oldebes	Dispensary	Ministry of Health	202
	15410	Olkokwe	Health Centre	Ministry of Health	203
	15477	Radat	Dispensary	Ministry of Health	204
	20008	Rosoga	Dispensary	Ministry of Health	205
	15593	Sirwa	Dispensary	Ministry of Health	206
	15613	Sore	Dispensary	Ministry of Health	207
	20004	Tian	Dispensary	Ministry of Health	208
	17096	Waseges	Dispensary	Ministry of Health	209
	17095	Chemoinoi	Dispensary	Ministry of Health	210
BARINGO SOUTH/M ARIGAT	17056	Barsemoi	Dispensary	Ministry of Health	211
	17351	Eldume	Dispensary	Ministry of Health	212
	14568	Illinga'rua	Dispensary	Ministry of Health	213
	14702	Kapindasim	Dispensary	Ministry of Health	214
	14867	Kimalel	Health Centre	Ministry of Health	215
	14941	Kiserian	Dispensary	NGO	216
	14976	Kokwa	Dispensary	Ministry of Health	217
	14990	Koriema	Dispensary	Ministry of Health	218
	17348	Lamaiwe	Dispensary	Ministry of Health	219
	15042	Loboi	Dispensary	Ministry of Health	220
	15137	Marigat Catholic Mission	Dispensary	NGO	221
	15138	Marigat Sub District	Hospital	Ministry of Health	222
	15192	Mochongoi	Health Centre	Ministry of Health	223
	15336	Ngambo	Dispensary	Ministry of Health	224
	17349	Nyimbei	Dispensary	Ministry of Health	225
	15386	Ol-Arabel	Dispensary	Ministry of Health	226
	15527	Sandai	Dispensary	Ministry of Health	227
	15517	Salabani	Dispensary	Ministry of Health	228
	17350	Sirata	Dispensary	Ministry of Health	229
	15506	Sabor	Dispensary	Ministry of Health	230
	14809	Kasiela	Dispensary	Ministry of Health	231
	15744	Tuiyobei	Dispensary	Ministry of Health	232
	14677	KampiYaSamaki	Health Centre	Ministry of Health	233
	20471	Kimoriot	Dispensary	Ministry of Health	234
	20472	Tinamoi	Dispensary	Ministry of Health	235
	20473	Kapkuikui	Dispensary	Ministry of Health	236

Source: Baringo County Government: Department of Health Services.

APPENDIX 8: FUNDS FLOW ARRANGEMENT ADOPTED:
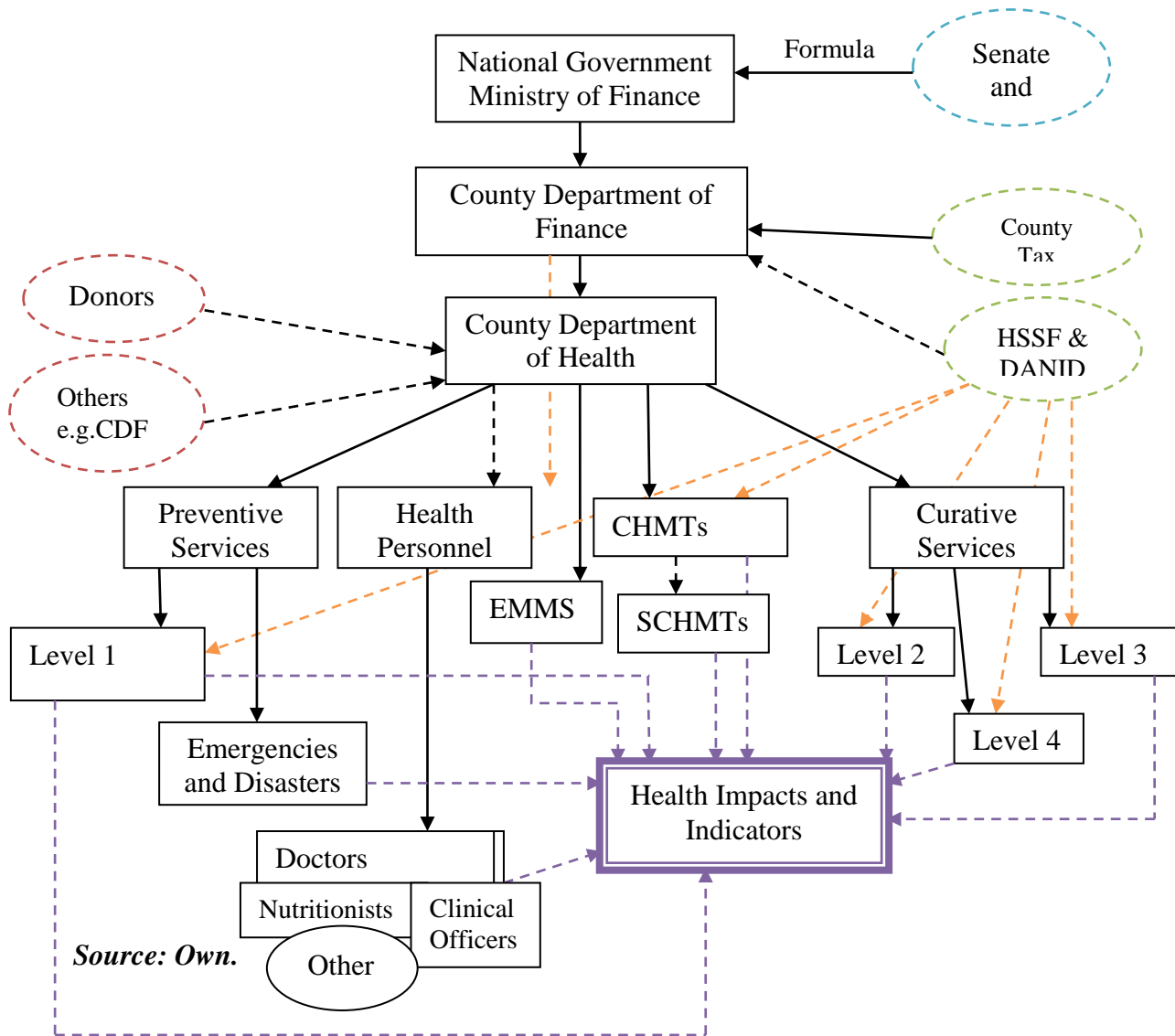
NB:

Level 1 - Community Based Health Services.

Level 2 - Dispensaries.

Level 3 - HealthCentres.

Level 4 - Both the sub-County and County Hospitals.

Doctors – Include Medical Doctors, Dentists and Pharmacists.

Others under personnel – includes public health officers, pharmaceutical technologists, laboratory technicians, occupational therapists, physiotherapists and community health extension workers (CHEWS).

Donors – NGOs or partners e.g. Aphia plus and World Vision that promote health services in the county.