

**EFFECT OF HIV/AIDS DONOR FUNDING ON HEALTH SYSTEM
INFRASTRUCTURE IN SIAYA COUNTY HEALTH
FACILITIES, WESTERN KENYA**

BY:

STEPHEN OMONDI ODHIAMBO

**A RESEARCH PROJECT SUBMITTED IN PARTIAL FULLFILMENT OF THE
REQUIREMENTS FOR THE DEGREE OF MASTER OF BUSINESS
ADMINISTRATION.**

SCHOOL OF BUSINESS & ECONOMICS

MASENO UNIVERSITY

©2015

DECLARATION

This report is my original work and has not been presented for an award of a degree or diploma or in any other University or institution. No part of this report may be reproduced without prior permission of the author and/or Maseno University.

STEPHEN OMONDI ODHIAMBO

PG/MBA/035/2008

Signature..... Date.....

I, the undersigned, confirm that this report has been submitted for examination with my approval as University Supervisor:

DR. PATRICK OJERA PhD

Department of Business Administration

Maseno University

Signature.....Date.....

ACKNOWLEDGEMENT

I wish to express my sincere gratitude to the following people for their contribution to this study:

Dr. Patrick Ojera, my research supervisors, for the valuable support, guidance, commitment and patience without which I would not have made it this far may the Almighty God bless you. Vivienne Kamire, Nicky Okeyo, Fredrick Odongo and Kennedy Mutahi who supported me in statistical data analysis, and finally to my wife Doreen for the support and encouragement.

DEDICATION

I dedicate this work first and foremost to the Almighty God and next to my beloved wife Doreen and my son Carl for providing the much needed enabling environment to help accomplish this task.

ABSTRACT

In 1994, donor funds only accounted for 8% of the health expenditure. This proportion increased to 16% in 2001/2002 and to 31.0% in 2005/2006. It is estimated that donor expenditure on health in 2008/09 amounted to 40.6% of the health expenditure. From 2001/2002 upto date, the total contributions of donor funds to total health expenditure increased from US\$ 118.9 million to US\$ 298.6 million. A large proportion of these funds (78%) went to funding HIV/AIDS related programmes. KAIS report in 2012 showed that Nyanza region had the highest Human immuno virus prevalence in Kenya of 15.1% compared to 5.6% nationwide, with Siaya at 23.4% prevalence rate. In Kenya quite a large share of the HIV/AIDS donor funding are directed towards efforts to mitigate the pandemic therefore no agency has been able to find out how these funds impact on the health systems. Funding was program specific with an objective of fighting HIV/AIDS through prevention, care and treatment, with little emphasis on provision for infrastructural investment. The general objective of the study was to determine the effect of HIV/AIDS donor funding on the health system infrastructure (HSI) in Siaya county. The specific objectives were to determine the effect of HIV/AIDS donor funds disbursement on the various components of the HSI and to assess various components of HSI that reported improvement as a result of donor funding. Piloting of the instrument was done in 5 facilities in Kisumu County, which helped in validating internal consistencies of the data collection tool and reliability of the tool was tested by use of test-retest method. The study drew from Resource dependence theory, it was conceptualised that HSI situation is over stretched with effect of HIV/AIDS donor funding as the independent variable and the HSI the dependent variables. It was a descriptive cross-sectional survey with target population of 80 and sample size of 80 health facilities(HF) in Siaya County. Data was collected using questionnaires. Logistic regression and Kendall's-b analysis was used to assess effect and correlation of donor funding on the HSI in Siaya County. From the study findings, HF that received HIV/AIDS donor funds were about 5 times more likely to have trained their staff, ($\beta =4.8$, $p=0.002$) as compared to those HF that did not receive funding. Also, those that received donor funding as compared to those that did not receive funding were about 10 times more likely to have had improvement in Information Technology infrastructure ($\beta =9.9$, $p<0.001$). In terms of various components of the health system infrastructure that reported improvement in physical infrastructure was 52 (65%) HF. Of these 16 (31%) did receive donor funds. Of the 80 HF 43(54%) reported training of staff , of these 26 (60%) did receive donor funds. On IT 47 (59%) reported improvement of IT, of these 30 (64%) received donor funds. The findings of this study show improvement that donor funds have had on the various components of the HSI. In conclusion, HIV/AIDS donor funding had a positive effect on IT infrastructure and staff training. Therefore more donor funds should be vailed to propagate the gains made in the health systems infrastructure in Siaya County. The study recommends further studies with a larger sample size focusing on aggregated funding. Since no other study has been done to look at the effect of HIV/AIDS donor funding on components of the health systems infrastructure in Kenya, more research needs to be done for comparison purposes. In addition further research needs to be carried out to determine the sustainability of the gains made in the health system infrastructure as a result of donor funds and to also to evaluate the effectiveness of donor funded health system infrastructure in comparison to non-funded health system infrastructure .

TABLE OF CONTENTS

DECLARATION.....	II
ACKNOWLEDGEMENT.....	III
DEDICATION	IV
ABSTRACT	V
TABLE OF CONTENTS	VI
LIST OF ABBREVIATIONS	IX
LIST OF TABLES	X
LIST OF FIGURES.....	XI
CHAPTER ONE.....	1
INTRODUCTION	1
1.1 Background of the study.....	1
1.2 Statement of the problem.....	4
1.3 Objectives.....	5
1.3.1 General Objective.....	5
1.4 Specific Objectives.....	5
1.5 Research Questions	5
1.6 Justification of the study.....	6
1.7 Theoretical Framework.	6
1.8 Conceptual Framework.	8
CHAPTER TWO.....	9
LITERATURE REVIEW	9
2.1 Introduction	9
2.2 Theory of the study.....	10
2.2.1 Resource dependence theory	10
2.3 Effect of HIV/AIDs donor funds disbursement on the various Health component.....	10
2.4 Components of the health systems infrastructure.....	13

CHAPTER THREE	16
METHODOLOGY	16
3.1 Research design	16
3.2 Study Area.....	16
3.3 Target Population	17
3.4 Sample size determination.....	17
3.5 Data Collection.....	17
3.5.1 Sources of data	17
3.5.2 Data Collection Procedure.....	17
3.5.3 Instrument for data Collection.....	18
3.5.4 Validity and Reliability Test(s) for Data Collection Instrument	18
3.7 Data Presentation.....	20
3.8 Research Ethics	20
CHAPTER FOUR	21
RESULTS AND DISCUSSIONS	21
4.1 Distribution of survey health facilities (HF).....	21
4.2 Effect of HIV/AIDs donor funds disbursement on the various Health component.....	22
4.3 Components of the Health system Infrastructure	24
CHAPTER FIVE	28
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS	28
5.1 Summary of Findings	28
5.2 Conclusions	29
5.3 Recommendations	30
5.4 Limitations.....	31
APPENDICES	41
Appendix 1: Map of Study area (Siaya County)	41
Appendix 2: Siaya Health Facilities that participated in the study.....	42
Appendix 3: Survey Questionnaire	46

Appendix 4: Consent document/Introductory Letter 55

LIST OF ABBREVIATIONS

AIDS	Acquired Immune Deficiency Syndrome
CDC	Centres for Disease Control and Prevention
HF	Health Facility
GOK	Government of Kenya
HF	Health Facilities
HIV	Human Immune virus
HSI	Health System Infrastructure
IT	Information Technology
KAIS	Kenya Aids Indicator Survey
KEMRI	Kenya Medical Research Institute
MOH	Ministry of Health
MOPHS	Ministry of Puplic Health and Sanitation
NACC	National AIDS Control Council Kenya
NASCOP	Narional AIDS and STI Control Programme
PEPFAR	Presidential Emergency Plan for AIDS Relief
SAS	Statistical Analysis Software
UN	United Nations
UNAIDS	United Nation AIDS Programme
WHO	World Health Organization
β	Beta coefficient

LIST OF TABLES

Table 1: Distribution of health facilities in terms of type and level	21
Table 2: Summary of donor funding,	22
Table 3: Health facilities and reported improvement in their HSI, Siaya County	25
Table 4: HIV/AIDS donor funding and IT infrastructure in Siaya County.....	20
Table 5: HIV/AIDS donor funding and staff training in Siaya County.....	21
Table 6: HIV/AIDS donor funding and physical infrastructure in Siaya County.....	21
Table 7: Logistic Regression and Kendall's Tau-b statistics showing HIV/AIDS donor funding vs the various components of the health systems infrastructure	22

LIST OF FIGURES

Fig 1: Theoretical framework	7
Fig 2: Conceptual framework.....	8

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

The World Health Organization (WHO) describes a health system as consisting of all organizations, people and actions whose primary intent is to promote, restore and maintain health. This includes efforts to influence determinants of health as well as more direct health-improving activities (WHO, 2007). Human Immunodeficiency virus (HIV) /Acquired Immunodeficiency Syndrome (AIDS) is a major public health concern affecting the health system both in developed and under-developed countries (UNAIDS 2010). The impact of the epidemic on developing countries health system is evident from the overstretched allocation of resources (that are insufficient) and overworked healthcare workforce (Twafik and Kinoti, 2003; WHO, 2006). The worst hit areas are countries in the sub-Saharan Africa, Kenya included which account for over 80% of cases and new infections (UNAIDS, 2012). In response to some of the health challenges posed by HIV, major international donors and Group of seven (G7) countries such as the United States of America (USA) have allocated financial resources over time to help combat HIV/AIDS in line with the United Nations (UN) millennium declaration goal 6 of combating HIV/AIDS, malaria and other diseases (UN, 2000; Ravishankar *et al.*, 2009; UN, 2010).

Over the past decade, these countries and their multilateral institutions agencies have provided approximately \$185 billion as development assistance for health to the low- and middle-income countries, the bulk of which is in Africa (Micheal, 2006; IHME, 2011). Much of this funding has been directed to programs and interventions for specific diseases such as HIV/AIDS and tuberculosis including other health focus areas (e.g., maternal and child health). Large global health initiatives such as the United States (US) Presidential Emergency

Fund for AIDS Relief (PEPFAR) and The Global Fund have disbursed funds for health assistance to Africa to fight these specific diseases (IHME, 2011). Disbursement of these funds have been disease specific with no mention of vertical allocation for health systems infrastructure; yet health interventions can only be provided in the presence of infrastructure to support them such as health workforce, physical infrastructure and information technology infrastructure.

In this regard, many African nations heavily depend on donors for health funding for HIV/AIDS programmes and infrastructural development activities. However as the worlds developed nations, known with philanthropy of funding health activities face economic challenges, so too does the HIV funding landscape since funding has faced a lot of stagnation (UNAIDS, 2012), meaning that developing nations increasingly get limited resources and hence the need to be put on value for money: funds need to be spent to yield the most effective impact and in the most efficient way.

Kenya as a country has benefited from these funds including PEPFAR allocations (MOPHS, 2011; PEPFAR, 2013). The Kenya AIDS indicator survey of 2012, put the prevalence rate of HIV in the country at 7.4% with approximately only 135,000 people living with HIV (PLH) on Antiretroviral treatment (ART) (NASCOP, 2009). In this same survey, Nyanza province of Kenya had the highest prevalence of HIV at 15.1%. The Asembo Baseline survey conducted in Siaya County conducted between 2003/2004 also put the region with a high HIV prevalence indicator of 15.1% (Amornkul *et al.*, 2009); this therefore led to the bulk of the HIV/AIDS donor funding focused in this region to help in combating the disease. Many programmes that are funded by the HIV donor funds such as male circumcision (MC), care and treatment have since been rolled out and scaled up to help in mitigating against the disease (MOPHS, 2011; PEPFAR, 2013). Over the past five years about USD 202,541,026 of Presidential emergency Plan For Aids Relief funds (PEPFAR) was channeled

to Nyanza Province, Siaya County to help in the fight against HIV/AIDS through the Kenya Medical Research Institute in collaboration with Centre for Disease Control and Prevention (KEMRI/CDC) program. Evidence and impact of this funding can be seen through the Kenya Aids indicator Survey (NASCO, 2013), which includes reduced AIDS death and incidence as a result of care and treatment program and reduced prevalence rate due to the rollout and scale-up of HIV prevention programs (NASCO, 2009; NASCO, 2013). The prevalence of HIV in the former Nyanza province has remained at the peripheral 14% as a result of minimal deaths witnessed in this region, as enough gains have been advanced in this field (NASCO, 2013).

Globally, there has been a trickle-down effect on infrastructural development such as physical infrastructure; renovations and putting up new buildings, improvement of information communication technology (ICT) and capacity building of the health care providers to equip them with necessary and modern skills to effectively carry out their roles and duties among others (Biesma *et al.*, ; Grepin, 2012b). In Kenya, there is evidence that a significant portion of HIV/AIDS donor funds are contributed on the health systems infrastructure development and improvement (Kaushal *et al.*, 2003; Palen *et al.*, 2012; Grepin, 2012b). However, there is no evidence on the level of funding and the health systems infrastructure gains and improvement. Equally, Siaya County has no empirical data to show the type of funding that were/are disbursed and gains made in the health systems infrastructure improvement in terms of staff capacity building, physical infrastructure and information technology infrastructure.

Siaya County health infrastructure has greatly benefitted from the donor funds (PEPFAR, 2013), yet no research has been conducted to establish the effect of these contributions on the specific components of the health infrastructure. There is paucity of

empirical data to the effect of HIV/AIDS donor funds on the health systems infrastructure in Siaya County.

This study therefore assessed the various components of the health systems infrastructure that reported improvement during the period of HIV/AIDS donor funding in the health facilities of Siaya County and finally the study determined the effect of HIV/AIDS donor funds disbursement on components of the health system infrastructure in Siaya County.

1.2 Statement of the problem

Multinational agencies have increasingly over the years disbursed funds to combat HIV/AIDS, there is concern about infrastructural outcomes; the effects both intended and unintended, of these initiatives on the recipient countries health systems. These concerns are bolstered by the fact that approximately one-third of donor funding on health and population programs was committed to HIV/AIDS during 2002–2006 (Shepard et al, 2016). There is also widespread consensus within the global health community on the need to strengthen health systems in order to improve intended health outcomes and meet regional and global targets such as universal quality health coverage and the health-related Millennium Development Goals.

Most donors and multilateral organizations involved in global health initiatives face challenges implementing and scaling up services due to the shortcomings witnessed in the health systems weaknesses and hence have equally resort to supporting interventions that uplift components of the health system. In Kenya quite a large share of the HIV/AIDS donor funding are directed towards efforts to mitigate the pandemic therefore no agency has been able to find out how these funds impact on the health systems.

Siaya County has continuously received donor funding to combat HIV with prevention care and treatment being the main focus in terms of program reporting. In addition, gains made in terms of reducing the incidence and mitigating the prevalence has been given immense focus.

However, no agency has been able to find out how these funds impact on the health systems infrastructure and improvements in services delivery.

This study therefore sought to understand existing gaps by collecting empirical data to highlight the impact of HIV/AIDS donor funding on the health systems infrastructure in Siaya County.

1.3 Objectives

1.3.1 General Objective

To determine the effect of HIV/AIDS donor funds on the health systems infrastructure in Siaya County.

1.4 Specific Objectives

1. To determine the effect of HIV/AIDS donor funds disbursement on the components of the health system infrastructure in Siaya County.
2. To assess components of the health systems infrastructure that reported improvement in Siaya county during the period of HIV/AIDS donor funding in health facilities within Siaya County.

1.5 Research Questions

1. What is the effect of HIV/AIDS donor funds disbursement on components of the health system infrastructure in Siaya County?
2. Which components of the health systems infrastructure reported improvement in Siaya county health facilities?

1.6 Justification of the study

HIV/AIDS donor funds have been used to militate against HIV and reduce both prevalence and incidence in Siaya County which has one of the highest prevalence rates of 23.4% over the years (NASCO, 2013). However, in terms of health systems infrastructure, there is paucity of data to show gains made. Results from this study will bring into focus gains made in the sector of health systems, more specifically information technology, staff training and physical infrastructure improvement. Overall, the study will look at the effect of HIV/AIDS funding on components of the health system. These findings will be critical in formulating and revising fund allocations both by the government and donors to put on value for money; funds spent for the greatest economic impact and in the most efficient way in this region and beyond.

1.7 Theoretical Framework.

This study is anchored on resource dependence theory which suggests that no firm can secure the resources and capabilities required to survive without interacting with firms and individuals beyond their boundaries. (Pfeffer and Salancik 1978). This therefore calls for the need of donors who bring in both financial and technical input. The study also anchors on the program theory that is explained as sum of impact and process dimensions, which is a manifestation of the programs rationale and blueprint for desired outcomes and causal links between the program resources, activities and outcomes (Chen 2005). This is best illustrated by logic model which shows the relationship among the resources that are invested, strategic activities that take place and benefits or changes that results. The tool has been used for 20 years by program managers to describe the effectiveness, the model describe logical linkages among program resources, activities, outputs, audience and short, intermediate and long term outcomes related to specific problem or situations.

It is basically a narrative of graphical depiction of processes in real life that communicate the underlying assumptions upon which activity is expected to lead to a specific result; illustrating sequence of cause and effect relationship , a systems approach to communicate the path towards a desired results.

Impact measurement has limited control over complex outcomes for instance establishing desired long-term outcome which is addressed by logic model, as it describes the concept that need to be considered when we seek such outcomes, linking problem situation to intervention input and output and the impact outcome information and data system. Borrowing from the theory we will be able to assess the effect of the introduction of the funds into the health system and bring out the outcomes.

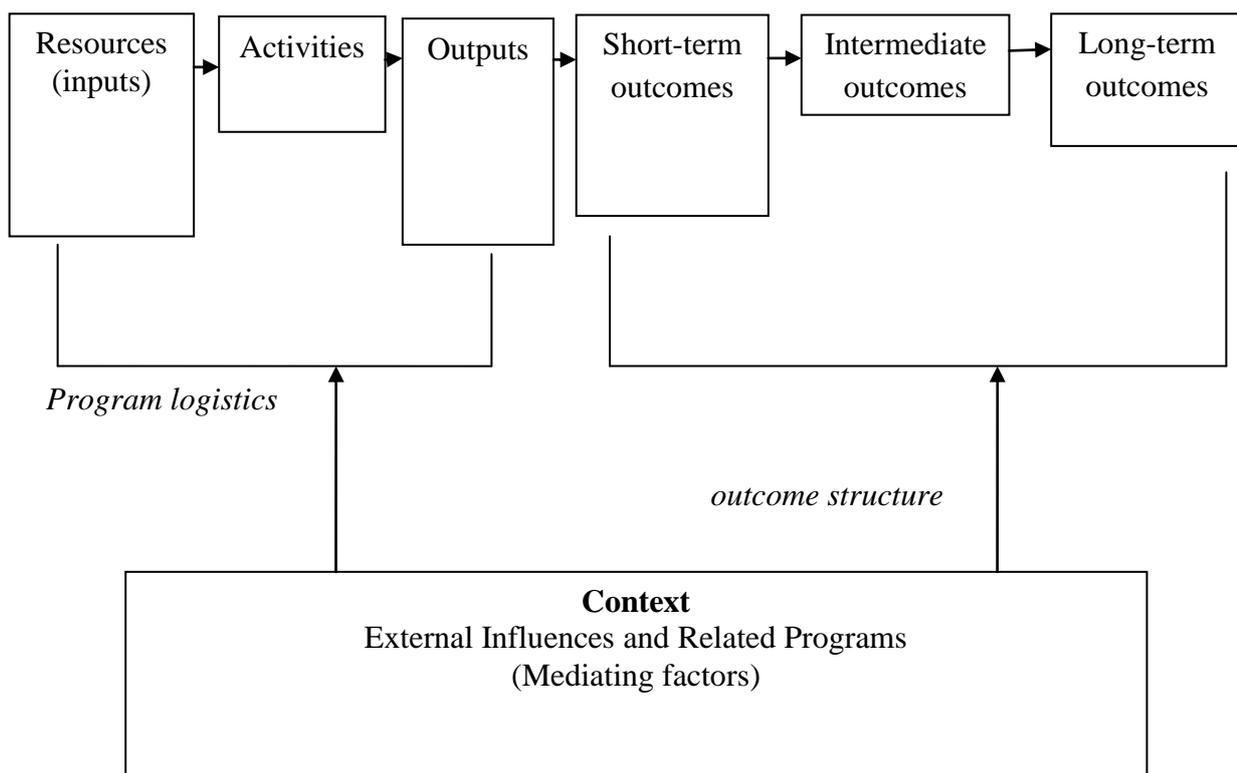


Fig 1: Theoretical framework highlighting the interrelation between the various components of the framework. (Wholey *et al.*, 2010)

1.8 Conceptual Framework.

The conceptual framework used for this study borrows from the program theory expounded by logic Model, the study will assume health system infrastructure situation that is overstretched, dilapidated, and the donor fund introduced into the system (the independent variable), impacts on the various components of the health system infrastructure (dependent variable) basically showing the flow of resources towards the desired outcomes (improvement on the health system infrastructure).

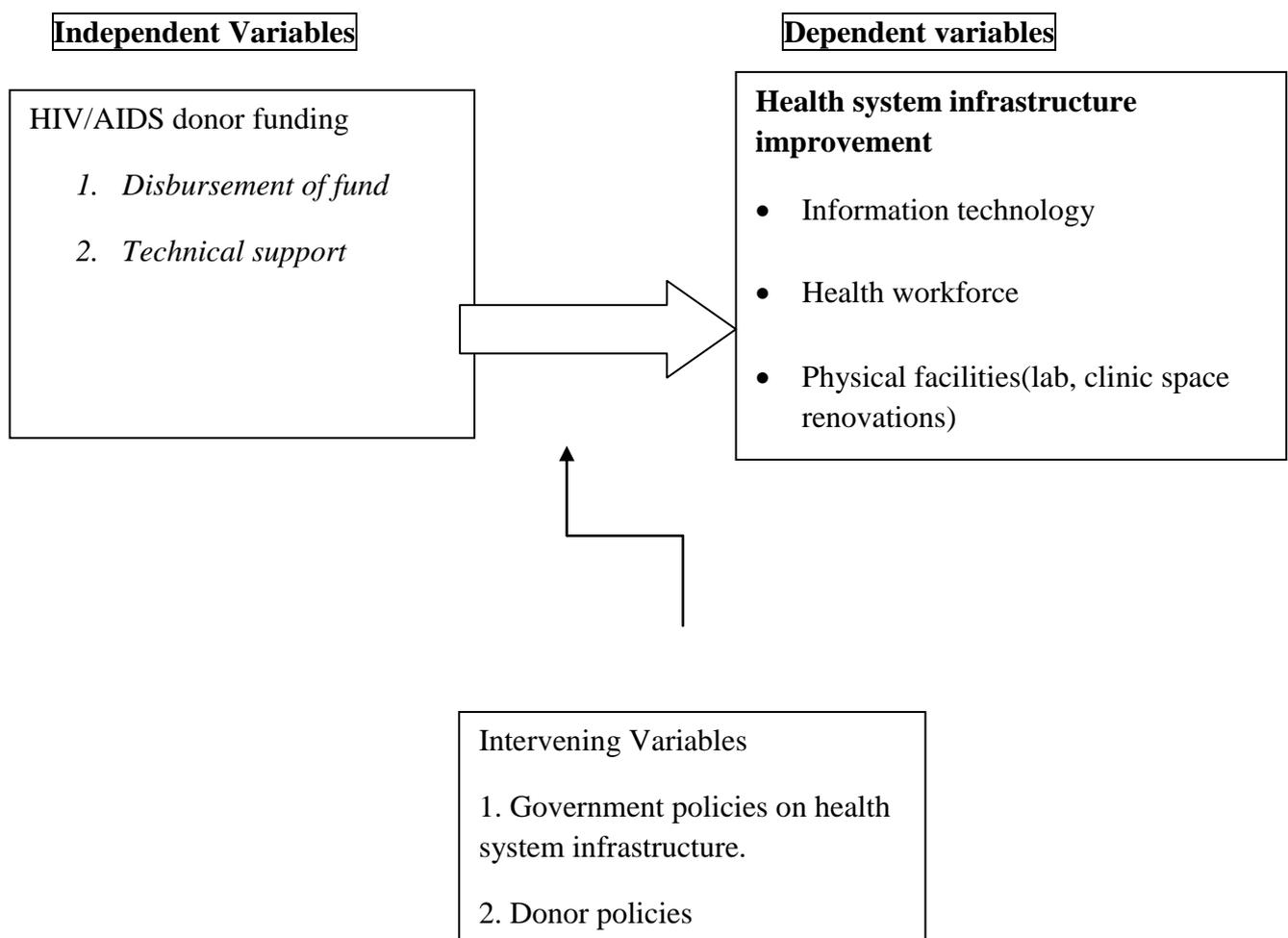


Fig 2: Effect of HIV/AIDS donor funding on the health systems infrastructure (Self-conceptualization 2012)

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

In 2009, UNAIDS estimated US\$ 25.1 billion to achieve universal coverage for key services in 2010 (UNAIDS 2009). The published research on efficiency of HIV/AIDS programmes is limited, but available studies indicated a heterogeneous performance of HIV/AIDS responses across countries and within a country (Marseille et al. 2007; Zanakis et al. 2007; Dandona et al. 2008; Zeng et al. 2012; 2014).

Funding for HIV/AIDS has re-opened a long-standing debate on whether HIV/AIDS funding has strengthened the health care system of recipient countries to manage other diseases. Conversely, it's argued that the infusion of HIV/AIDS funding weakens the health care system. HIV/AIDS receives disproportionately more resources than its share of disease burden, thereby drawing qualified staff from the rest of the country's health system and displacing resources that could have been used for other diseases (Wu Zeng et al, 2016). In addition, 2.7 million new HIV infections occurred, 1.8 people died and 34 million people living with HIV infection worldwide, to combat HIV/AIDS, the international community provided unprecedented financial assistance to support this course.

Retrospective studies conducted on resource need and gap analyses in achieving a historical goal remains to be informative for resource allocation for achieving MDG and post-MDG goals on HIV/ AIDS. Review of theoretical literature and empirical studies, focuses on the theoretical foundations on which the studies are built. It also explores comparative empirical literature which helps to explain the gap which the study sought to address.

2.2 Theory of the study

This review explores theoretical foundations of the study; it advances the theory that guided the study and defined concepts and variables and giving dimensions of the variables. According to Kerlinger (1973), a theory is a set of interrelated constructs, concepts, definitions, and prepositions that present a systematic view of phenomena specifying relations among variables, with the aim of explaining and predicting the phenomena. The effect of HIV/AIDS donor on health system infrastructure is anchored in the resource dependence theory.

2.2.1 Resource dependence theory

Resource dependence theory aspires to explain that no firm can secure the resources and capabilities required to survive without interacting with firms and individuals beyond their boundaries. (Pfeffer and Salancik 1978). The health system infrastructure therefore needs to interact with various organisations, the donors who bring in both financial and technical input, into the sector to enable survival, stability and improvement.

2.3 Effect of HIV/AIDS donor funds disbursement on the various Health component

Poor infrastructure has been cited in a number of studies in middle and low income countries as undermining health service delivery (Rao *et al.*, 2006; Mandal *et al.*, 2006). It is therefore important to leverage such funding to not only combat diseases but also improve on infrastructure. In most developing countries, donor funding is channeled through 'intermediary' groups, such as government-run HIV/AIDS organizations and regional NGOs, who then allocate these funds to the facilities by way of fulfilling the needs based on implementation, monitoring and evaluation of the activities and programmes (Dietrich, 2007). Quite substantial effects of the fund disbursement is felt in the facilities when the implementing partners or NGOs, undertake to carry out, such activities as training to improve

capacity of the health workforce, timely salary disbursements, buying and supplying of laboratory equipment, reagents ,providing of ARV drugs, and expanding the work space amongst others (Palen *et al.*, 2012; Grepin, 2012b). To enforce the above school of thought for the health system, efforts have been put in place on the HIV/AIDS donor monies to serve a broader set of health conditions, in particular to strengthen health systems in ways that have positive impact beyond treating individuals who currently have AIDS, the pressure also comes from within the donors as they realize the limitations of a weak health system, that hinder achievement of the laid down objectives of ensuring that recipient countries have the capacity to sustain the overall demands of the health care system, and more so in response to the HIV pandemic (WHO, 2009; Shakarishvili, 2009). PEPFAR in its five year strategic plan did also reiterate that a qualified workforce is essential to the effective delivery of public health programs and services hence the need to increase access to public health training and continuing education, adequate ration of health workforce to the residents to ensure proper functionality and quality of services of the health services (PEPFAR, 2009). Donors have also laid a lot of emphasis on information technology as one of the key pillars that need technical assistance through the donor funds because of their vital contribution to the entire health system infrastructure and has thus supported capacity building for national information systems (Samb *et al.*, 2009). Research has shown that health information technology has helped in boosting efficiency of health service delivery, cost reduction and quality of health care delivery through meaningful use of electronic health record (HER) (Resnick *et al.*, 2010 ; Romano *et al.* 2011). Improved information has also been very vital in areas that call for interpretation and decision making support (Kaushal *et al.*, 2003).

In Kenya, alot of investment on health system infrastructure has been empasized. This is in line with the donors and ministry of health mandate of strengthening the health care system (MOPHS, 2011; PEPFAR, 2009). Also worth noting is that investment in infrastructure has

not in any way traded off services provision focused in reduction in HIV incidence and mortality (Dutta *et al.*, 2012; Harding *et al.*, 2013). However leveraging strengthening of health system and services provision from donor aided support is an area in Kenya that has received very minimal attention or none from researches leading to lack of empirical data to conclusively deduce this association; it is for this reason that the Kenyan government through the Kenya national AIDS Strategic Plan III decided to prioritize health system strengthening to enable provision of an enabling environment for effective and accountable performance of the HIV health sector (NACC, 2009). In Siaya County, a lot has been done with donor resource input in terms of HIV services provision and scale up. In addition, a lot of health systems development and physical infrastructural development has been done in accordance with the HIV/AIDS donors guidelines of health system strengthening (MOPHS, 2011; PEPFAR, 2013). However there is no documentation or empirical data that has since been collected to assess the extent of the health system support of the donor funds. In addition no study has since been conducted to look at the impact of the funds on health infrastructure in Kenya. The study therefore sought to highlight and bring into the nature of the effect of HIV/AIDS donor funding on the health infrastructure in Siaya County, one of the counties hardest hit by the HIV epidemic (NASCOP, 2013).

The pandemic of human immunodeficiency virus (HIV) and acquired immunodeficiency syndrome (AIDS) has spread rapidly since the 1980s. In 2010, 2.7 million new HIV infections occurred, 1.8 million people died, and 34 million people were living with HIV infections worldwide. To combat HIV/AIDS, the international community has provided unprecedented financial assistance (WHO, 2009). This funding for HIV/AIDS has re-opened a long-standing debate on whether HIV/AIDS funding has strengthened the health care system of recipient countries to manage other diseases. Advocates of an enhancement effect of HIV/AIDS funding believe that the country's AIDS program has improved the infrastructure,

management, communications, laboratories, information systems, and human resources. Additionally, they claim that HIV/AIDS funding has contributed to standardization of services, strengthened monitoring and surveillance systems, better integration of HIV/AIDS service and primary health care, fewer funding gaps for health care, and the provision of services that the existing system had been unable to provide (Evan et al, 2009).

According to the study conducted by Shepard *et al*, in 2016 it was found out that human immunodeficiency virus/acquired immunodeficiency syndrome (HIV/AIDS) receives more donor funding globally than that for all other diseases combined, some critics allege this support undermines general health care. This empirical study evaluates the impact of HIV/AIDS funding on the primary health care system in Rwanda. Using a quasi-experimental design, they randomly selected 25 rural health centers (HCs) that started comprehensive HIV/AIDS services from 2002 through 2006 as the intervention group. Matched HCs with no HIV/AIDS services formed the control group. The analysis compared growth in inputs and services between intervention and control HCs with a difference-in-difference analysis in a random-effects model. Intervention HCs performed better than control HCs in most services (seven of nine), although only one of these improvements (Bacille Calmette-Guérin vaccination) reached or approached statistical significance. In conclusion, this six-year controlled study found no adverse effects of the expansion of HIV/AIDS services on non-HIV services among rural health centers in Rwanda.

2.4 Components of the health systems infrastructure

Public health infrastructure can be described by what it is and what it does, and defined as the nerve center of the public health system, representing the capacity necessary to carry out public health's core functions(Bernard Turncock, 2001).According to Edward L. Baker Jr.*at all* (2005), health system infrastructure consists of functional support for executing the essential services in the formal, public-sector framework it consists of the workforce

competencies, the communication and information system, and organizational capacities, when the components of public health infrastructure are strong, the system can carry out its core functions and essential services with uniform effectiveness.

Health system is the sum total of all the organization's, institutions and resources whose primary purpose is to improve health. A good health system requires a robust financing mechanism, a well-trained and adequately paid workforce, reliable information on which to base decisions and policies, well-maintained facilities and logistics to deliver quality medicines and technologies (WHO, 2007). Various organizations and institutions have over the years embarked in trying to evaluate how health funding from bilateral donors have impacted on the health systems infrastructure on the various recipients globally in terms of health workforce, information and communication and physical infrastructure adjustments. In its report to the US Senate, centers for disease Control and prevention (CDC) highlighted areas that needed strengthening to impact the quality of health services to the citizenry and the global community and these areas were workforce capacity and competency, Information and data systems, and organizational capacities of local and State health departments and laboratories (CDC, 1999). In West Africa, a region the has recently been hit by Ebola upsurge, the African Development Bank (ADB) in its appraisal report noted that some of the challenges that hampered efforts to reduce morbidity, mortality and curb transmission of the Ebola were lack of laboratory capacity, health worker shortages and insufficiently trained personnel for conducting diagnosis, treatment and logistics management hence a poor public health infrastructure. It is for this reason that the Bank embarked on strengthening the public health system and infrastructure (ADBG, 2014). The WHO equally acknowledges gaps in the global health systems and its infrastructure with evidence of health inequalities even in populations from the developed nations (WHO, 2007). In addition the global health body has acknowledged lack of health staff force particularly in Africa and poor health information

infrastructure as major setbacks in achieving access to health care globally (WHO, 2007). Due to these gaps especially in Africa, and with HIV pandemic having its toll among the African population, a lot of HIV/AIDS funding has been channeled to Sub Saharan Africa with the intention of fighting the diseases and also improving on the health systems infrastructure (Merson, 2006). Kenya has over the years received funds from The Global Fund to Fight AIDS, Tuberculosis and Malaria and PEPFAR to fight HIV (MOPHS, 2011). Much the HIV funding has been used to fight disease mortality and morbidity (NASCO, 2013). However in terms of health systems strengthening, there is no empirical data in Kenya that looks at this vital area of the health systems improvement as a result of HIV funding from the bilateral donors. The study looked at the role of the HIV donor funds in terms of improvement of the health systems infrastructure. More categorically the study looked at whether donor funds for HIV programmes improved the three aspects of health systems infrastructure namely information technology, staff training and physical infrastructure in Siaya County.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This section discusses the research design for the study, target population, the data collection method and the data analysis method.

3.1 Research design

The study adopted a cross-sectional survey research design to obtain empirical data to address the objectives of the study. Cross-sectional survey was deemed appropriate for the study because it enabled collection of data to make inferences about a population of interest at one point in time. Cross-sectional surveys have been described as snapshots of populations about which they gather data. Cross-sectional surveys can be conducted using any mode of data collection, including interviews and mailed or self-administered questionnaires. This design also ensures that each respondent filled in only one questionnaire during the data collection period without filling the questionnaires at some other time in the future. Thus the responses obtained were only applied for the period under study.

3.2 Study Area

This study was conducted in Siaya County (Appendix 1) of western Kenya, having one of the highest prevalence of HIV. According to the Kenya AIDS indicator survey of 2012, Siaya County had an HIV prevalence of 23.4% (NASCO, 2013). High HIV burden Counties of the former Nyanza Province including Siaya County were beneficiaries of HIV/AIDS donor funding through CDC and other partners to help fight the scourge.

3.3 Target Population

Siaya County has numerous health facilities (HF) that offer health services including HIV prevention, care and treatment services in this region. The study was a census of all the health facilities in Siaya County. A total of 80 HF in Siaya County consented to take part in the survey (Appendix 2).

3.4 Sample size determination

The sampling size is a list of potential members of the target population to be included in the sample (Mugenda and Mugenda, 2003). It is a list of elements from which a sample is drawn (Cooper and Schindler, 2001). In this study, the sample size consisted of all the 80 health facilities (HF) in Siaya. This sample size was selected using census sampling technique. This technique was chosen because there were enough financial resources to conduct the study. In addition, the units of study were not too many.

3.5 Data Collection

3.5.1 Sources of data

Primary data was collected using a self-administered questionnaire on the HIV/AIDS donor funding and health system infrastructure in Siaya County. Primary data were sought for due to their proximity to the truth and control over error (Copper and Schindler, 2003).

3.5.2 Data Collection Procedure

The questionnaire was administered with the help of one research assistant cum interviewer after seeking consent from the respondents. The Questions were administered to the hospital administrators from these health facilities via face to face interviews in English .The interviews were done in a place that offered privacy and upheld confidentiality to the respondents, within the health facilities.

3.5.3 Instrument for data Collection

The questionnaire was developed and categorized in such a way that every study objective was addressed by ensuring that there were specific questions for each objective.

3.5.4 Validity and Reliability Test(s) for Data Collection Instrument

In this study validity of instruments was ensured by using simple language when constructing instruments for respondents to understand easily. Use of side notes to guide the respondents was also used to improve the validity of the instrument. The research instruments were also given to two experts in the area for the review. The University supervisor as well also reviewed the instrument to see whether they are answering the research objectives or questions that were being investigated.

Reliability is the extent to which a measurement instrument yields consistent, stable and uniform results over repeated observations or measurements under the same conditions each time. The study instruments were tested for reliability using the test-retest technique in 5 health facilities in Kisumu County for a period of two weeks. According to Cooper and Schindler (2010), test-retest enables the study to compare research instruments over time. This technique involved administering the same questionnaire and interview schedules guides twice to the same group of subjects, but after an interval of two weeks. The study ensured that there was no sensitization to the respondents to the subject matter which would influence the responses given in the tests. After the first testing, the second retest was done after exactly two weeks, if the researcher obtained the same results on the two administrations of the instrument hence the reliability coefficient was 1.00, this was tested by use of the Pearson product-moment correlation coefficient. This was used to measure the correlation of two variables X and Y measured on the same respondents (Wessa, 2008). This was calculated using the following formula

The results from both the first and second tests were accurately recorded by the study and then was compared and correlated with each other which gave a measure of reliability while taking into account the time differences. The result obtained in the test-retest method enabled final improvement of the research instruments to be sent out to the selected respondents in Siaya County

3.6 Data Analysis

Data was analyzed by use of descriptive statistics, correlation and regression analysis. The dependent variable was ‘donor funding’ among the institutions. The independent variables included health workforce staff training, ICT infrastructure, and physical infrastructure. Characteristics of the participating institutions were summarized using descriptive statistics, where appropriate. The proportions for categorical variables were presented as frequencies and percentages whereas continuous variables were presented as mean with standard deviation or median with corresponding interquartile range. Since the dependent variable (donor funding) was binary, Logistic regression model was used to assess its potential effect on staff training, ICT infrastructure, and physical infrastructure. The Kendall's Tau-b, a measure of rank correlation, was used to assess whether there existed a correlation between the ‘donor funding’ and the independent variables. Statistical analysis was performed using SAS version 9.3 (SAS Institute Inc., Cary, NC) and p-value of less than 0.05 used to define statistical significance.

The analysis techniques were appropriately chosen to suit the requirements of each objective, to address the first objective, the study employed Logistic Regression and Kendall’s Taub-b Analysis. Logistic regression model was used to assess its potential effect on staff training, ICT infrastructure, and physical infrastructure. The Kendall's Tau-b, was used to assess

whether there existed a correlation between the ‘donor funding’ and the independent variables listed above.

The second objective sought to assesses the various components of the health systems infrastructure that reported improvement in Siaya County during the period of HIV/AIDS donor funding in the health facilities of Siaya County was analyzed by use of descriptive statistics.

3.7 Data Presentation

The data obtained from the questionnaire was summarized using descriptive statistics such as frequencies and percentages in form of tables. After data cleaning and validation, frequencies and percentages were populated. Other statistical presentations that assessed the regression and correlation were also presented in the form of tables. For correlation and regression, the analysis was put at 95% confidence interval.

3.8 Research Ethics

These are principles or standards that protect the rights of participant in a research study, this are actions taken to assure safety and rights of participants are not violated whatsoever. These considerations are therefore usually made to ensure that research work involving human or animal subjects are carried out in accordance with high ethical standards. These standards include voluntary participation, informed consent, and confidentiality of information, anonymity to research participants and approval from relevant authority such as independent review boards (IRBs) to conduct the research study. The researcher got permission to carry out the study from Maseno and ministry of health, the nature and the purpose of the study were explained to the respondents before data was collected , and the participants were assured of privacy the information obtained for research purposes.

CHAPTER FOUR

RESULTS AND DISCUSSIONS

This chapter displays results and analysis of the study findings. A total of 80 respondents (hospital administrators) representing the 80 health facilities (HF) in Siaya County took part in the survey between November 2013 and December 2013. The results are displayed in form of tables.

4.1 Distribution of survey health facilities (HF)

Table 1: Distribution of health facilities in terms of type and level

Variable	N	%
Level of Health Facility (80)		
Level One	4	5.0
Level Two	25	31.2
Level Three	30	37.5
Level Four	21	26.3
Type of Health Facility (80)		
Government/MOH	52	65.0
Faith Based	8	10.0
Community based	20	25.0

Table 1 shows a summary of the distribution of the health facilities in terms of level and type. A total of 80 health facilities (HF) accepted and took part in the survey. In terms of the level, 37.5% were level three HF, 31.2% were level two, 26.3% were level four with only 5% falling under level one. Sixty five percent (65%) of the health facilities were government run,

8% were faith based with 25% being community based health facilities. From the findings, majority of the HF were run under the Government of Kenya (GoK) through the Ministry of Health (MOH) and were level three health facilities.

4.2 Effect of HIV/AIDS donor funds disbursement on the various Health component

This section shows a summary of the effect of HIV/AIDS donor funds disbursement on the various components of health systems infrastructure improvement in Siaya County in the last two years prior to the survey. A total of 45 health facilities, approximately 56.2% did not receive funds from donors with 35 receiving any funds. Of the 35 that received the funds, 40% (14) of the HF received donor aid both as fund disbursement and technical input, whereas 31.4%(11) and 28.6%(10) received funding in the form of fund disbursement and technical input respectively. A summary of this distribution is shown in table 2 below.

Table 2: Summary of donor funding,

Variable/Characteristic	n	%
Number that did not receive donor funding	45	56.2
Number that received donor funding	35	43.8
Type of Donor funding (35)		
Funds disbursement	11	31.4
Technical input	10	28.6
Both Fund disbursement and Technical Input	14	40.0

This section details the regression analysis showing the effect of HIV/AIDS donor funding on the various components of health systems infrastructure namely; information technology, staff

training and physical infrastructure. These results tables are detailed below with a detailed summary shown in table 6.

Table 3: HIV/AIDS donor funding and IT infrastructure in Siaya County

HIV/AIDS donor funding	IT Infrastructure improvement		
	No	Yes	Total
No	28	17	45
	62%	38%	
Yes	5	30	35
	14%	86%	
	33	47	80

Table 4: HIV/AIDS donor funding and staff training in Siaya County

Donor Funding	Staff training		
	No	Yes	Total
No	28	17	45
	62%	38%	
Yes	9	26	35
	26%	74%	
Total	37	43	80

Table 5: HIV/AIDS donor funding and physical infrastructure in Siaya County

Donor Funding	Physical infrastructure Improvement		
	No	Yes	
No	9	36	45
	20%	80%	
Yes	19	16	35
	54%	46%	
Total	28	52	80

The summary of the association between HIV/AIDS donor funding and the various components of the health systems infrastructure is shown in the regression and correlation table 6 below.

Table 6: Logistic Regression and Kendall's Tau-b statistics showing HIV/AIDS donor funding vs the various components of the health systems infrastructure

Dependent variables	Donor funding		Regression Analysis		Correlation Analysis
	Yes (n=35)	No (n=45)	Beta coefficients	P- value	Kendall's Tau-b coefficient (95% CI)
Staff trained					
Yes	26 (74%)	17 (38%)	4.8 (1.8-12.5)	0.002*	0.4 (0.2;0.6)*
No	9 (26%)	28 (62%)	Ref		
Physical structure					
Yes	16 (46%)	36 (80%)	0.2 (0.1-0.6)	0.002*	-0.4 (-0.6;-0.2)*
No	19 (54%)	9 (20%)	ref		
IT Infrastructure					
Yes	30 (86%)	17 (38%)	9.9 (3.2-30.3)	<0.001	0.5 (0.3;0.7)*
No	5 (14%)	28 (62%)	Ref		

The table above (table 6) shows a logistic regression analysis of the association between HIV/AIDS donor funding and the three components of the health systems infrastructure namely; staff training, physical infrastructure and IT infrastructure. In this analysis, health facilities that received HIV/AIDS donor funds were about 5 times more likely to have trained their staff, (Beta coefficients =4.8 (1.8-12.5), p-value 0.002*) as compared to those HF that did not receive funding. Also, health facilities that received donor funding as compared to those that did not receive funding were about 10 times more likely to have had improvement in IT infrastructure (Beta coefficients =9.9 (3.2-30.3), p-value< 0.001*). However, in terms of improvement in physical infrastructure, health facilities that received donor funding did not show any improvement as compared to those that did not receive the donor funds (Beta coefficients =0.2 (0.1-0.6), p-value 0.002*). The most likely explanation in terms of no improvement in physical infrastructure is the fact that the government of Kenya did embark on improving the physical infrastructure and equipping the health facilities in the entire country (MOPHS, 2011). HIV/AIDS donor funds have for a long period been used to improve IT in the developing world. Emphasis has been laid in the area of data and networking and enhancement in communication (WHO, 2007). The results from this study also resonate around the the premise of capacity building of the health workforce to improve on efficient and professionalism in health service delivery (WHO, 2009; Ejughemre, 2013), as all this would go hand in hand in improving the health outcomes in the community. It is also worth noting that strengthening of IT infrastructure has lead to improvement in efficiency of operations in the health sector, enhancement in decision making and overallly improvement in health outcomes (WHO, 2009).

In terms of correlation analysis (table 6), the Kendall's Tau-b correlation coefficient (0.4) revealed a moderate positive correlation between donor funding and staff training. The

asymptotic 95% confidence interval for the Kendall's Tau-b coefficient didn't contain zero implying that the correlation was statistically significant. On the other hand, the Kendall's Tau-b correlation coefficient (-0.4) revealed a moderate negative correlation between donor funding and physical structures. The asymptotic 95% confidence interval for the Kendall's Tau-b coefficient didn't zero implying that the correlation was statistically significant. Lastly, the Kendall's Tau-b correlation coefficient (0.5) revealed a moderate positive correlation between donor funding and IT infrastructure. The asymptotic 95% confidence interval for the Kendall's Tau-b coefficient didn't contain zero implying that the correlation was statistically significant. The results concurs to the study conducted by Shepard, *et al*, 2016 where the analysis compared growth in inputs and services between intervention and control HCs with a difference-in-difference analysis in a random-effects model for the HIV/AIDS intervention. Intervention HCs performed better than control HCs in most services (seven of nine), although only one of these improvements (Bacille Calmette-Guérin vaccination) reached or approached statistical significance

4.3 Components of the Health system Infrastructure

This section is a summary of the components of health system infrastructure that reported improvement in Siaya County during the period of HIV/AIDS donor funding in the health facilities. It is imperative to note that donor funds disbursement and technical input were done in this region in the year 2012. Health systems infrastructure in our context was looked at in terms of improvement in Information technology infrastructure which is data management, communication and networking, staff training and improvement in physical infrastructure. Table 7 below shows health systems infrastructure improvement in Siaya County during the period of donor funds allocation

Table 7: Health facilities that reported improvement in their HSI, Siaya County

Dependent Variable	Donor Funded (HF)		Total
	Yes	No	
Improvement in Physical Infrastructure	16	36	52
No improvement in Physical Infrastructure	19	9	28
Staff Training done	26	17	43
No staff Training done	9	28	37
Information Technology Improvement	30	17	47
No improvement in Information Technology	5	28	33

A total of 52 HF reported improvement in physical infrastructure. Of these, 16 reported having received HIV/AIDS donor funds and 36 not having received any funds from the donors. Equally, 28 HF did not report any improvement in physical infrastructure, of which 19 reported having received donor funds. In terms of staff training, a total of 43 HF reported having had their staff trained of which 26 were donor funded. A total of 37 HF reported not having trained any of their staff in the past two years with a majority (28) not having been recipients of the donor funds. The Information technology (IT) aspect of the health systems infrastructure showed that 47 HF reported improvement in IT with 30 of these having received the donor funds. Of the 33 facilities that did not report any improvement in IT, 28 did not receive any form of funding.

The findings of this study show specific contributions that these funds have had on the various components of the health system. Aspects of the health system infrastructure included staff trainings, physical infrastructure and information technology (IT) infrastructure. From our findings, majority of the health facilities had their physical infrastructure improved and IT

infrastructure improvement supported by the donor funds. The findings also reveal that human resource as one of the health infrastructures was improved or benefited by way of staff training. From these findings, it is important to note that donor funding for HIV/AIDS programmes in Siaya County did complement the Kenyan government in its effort to improve on the health system infrastructure. Over the past decade, there has been a massive scale up of HIV prevention, care and treatment services in Siaya County. Results and findings have equally highlighted the additional benefits of directing funds in uplifting the health system infrastructure. El-Sadar *et al.*, (2007) also highlighted the fact that those programmes and activities that are well thought and implemented and properly scaled up have served as an avenue for achieving broad health benefits especially establishing a more effective and responsive health system. Yu *et al.*, (2008) in his findings also acknowledges the need to invest in health programmes so as to strengthen health systems in developing countries. It is worthwhile to note that most donor funds are normally channeled for programme interventions (disease specific) with little emphasis on broad based investments in health infrastructure, human resources, and community oriented primary healthcare services (Kirunga *et al.*, 2006; Delph, 2008). However, donor funds have also been used to improve infrastructure, management, communications, laboratories, information systems, and human resources as well as contributed to standardization of services, including strengthening monitoring and surveillance systems of health systems (Ejughemre, 2013). The study has equally shown such improvement and contribution. However, with evidence of over reliance on donor funds to run and uplift the health system in the county, the health system may have to contend with challenges of sustainability and corruption in supporting the various components that benefit from donor aid due to dwindling donor funding opportunities (TI, 2006; Kirigia and Diarra-Nama, 2008; Grepin, 2012a; Merson *et al.*, 2012; Gibbs *et al.*, 2015). The findings also resonate around recommendations of improving the physical hospital

infrastructure (Kotzee and Couper 2006). All in all, the use of donor funding need to cater for both diagonal and horizontal financing approaches, and this needs a gradual context to enhance a holistic improvement in the overall health care infrastructure (Ooms *et al.*, 2008).

From this study, facilities that received donor funding reported an improvement on IT infrastructure. Previous studies have shown that IT improvement and use of information and communications technologies (ICT) in support of health and health related fields, including health-care services, health surveillance, health literature, and health education etc, has the potential to greatly improve health service efficiency, expand or scale up treatment delivery to thousands of patients in developing countries, and improve patient outcomes (AbouZahr and Boerma, 2005). Similarly other studies in the continent have shown a great improvement in IT infrastructure when donor funds are availed (Ejughemre, 2013).

Equally, from our findings, various health facilities did offer staff training to the healthcare workforce in the health facilities in Siaya County. These trainings were as a beneficiary of the donor funds in this region. Respondents recorded both on the job trainings and trainings tailored for personal development as having been achieved as a result of the funds for the majority of the health facilities. In addition Kotzee and Couper (2006) in their findings listed career progression and provision of continuing medical education as some of the key area that were highlighted by the health workforce as essential for their retention and motivation. However there is a great risk of over-relying on donor funds to carry out health work force trainings because it may not be sustainable in the long run and also limited numbers would be trained (Mushi *et al.*, 2011). This therefore should be a wakeup call to both the national and the county government to also inject in resources to sustain and expand the healthcare work force training programme to improve on coverage and quality of health care service provision in Siaya County and Kenya as a whole

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This Chapter presents the summary, conclusions and recommendations drawn from the findings of the study. It presents the contribution of this research to the body of knowledge. It discusses the conclusions based on the research objectives, methodology, limitations of the study and recommendations for further research. The analysis was based on the dependent variable (Donor funding) and its association with the independent variables (Staff training, Physical structure and IT Infrastructure). The conclusions are based on the research objectives and on the analyses conducted in chapter four.

5.1 Summary of Findings

The first objective in the study was to determine the effect of HIV/AIDS donor funds disbursement on the various components of the health system infrastructure in Siaya County. Data analysis and interpretation revealed that majority of the health facilities had their physical infrastructure improved and IT infrastructure improvement supported by the donor funds. The findings also revealed that human resource as one of the health infrastructures was improved or benefited by way of staff training. From these findings, it is important to note that donor funding for HIV/AIDS programs in Siaya County did have a positive results to the Kenyan government in its effort to improve on the health system infrastructure.

The second objective of this study was to assess the various components of the health systems infrastructure that reported improvement in Siaya county during the period of HIV/AIDS donor funding in the health facilities of Siaya County. Data analysis and interpretation revealed that in terms of improvement in physical infrastructure, health facilities that received donor

funding did not show any improvement as compared to those that did not receive the donor funds . The most likely explanation in terms of no improvement in physical infrastructure is the fact that the government of Kenya did embark on improving the physical infrastructure and equipping the health facilities in the entire country. HIV/AIDS donor funds have for a long period been used to improve IT in the developing world. Emphasis has been laid in the area of data and networking and enhancement in communication.

5.2 Conclusions

From the findings, 43.8% of the health facilities in Siaya County benefited from HIV/AIDS donor funding. Funding was either through funds disbursement or through technical input. 40% of the health facilities that benefited from this funding benefitted through both funds disbursement and technical input. The components of the health systems infrastructure that benefitted from the funds included staff training, physical infrastructure and information infrastructure. Results from our analysis show that those facilities that received HIV/AIDS donor funds were 10 times more likely to improve on their IT infrastructure and also 5 times more likely to train their health personnel as compared to those HF that did not receive the funds. In addition there was no significant difference between HF that received HIV/AIDS donor funds with those that did not receive the funds in terms of physical infrastructure improvement. In terms of correlation, there was a weak positive correlation between donor funding and staff training. There was also a weak correlation between donor funding and IT infrastructure improvement. However, the correlation between donor funding and physical infrastructure improvement showed a weak negative correlation.

The results exhibited from our analysis show that it is possible to have health systems infrastructure improved in the health facilities using the HIV/AIDS donor funding; this improvement of the infrastructure will go a long way in improving the necessary IT

infrastructure and staffing to be able to offer the best possible platform for implementation of programme work that is geared towards reducing both disease prevalence and incidence disease occurrence. In as much as there was robust positive effect on IT infrastructure and staff training, it is also imperative to investigate what happened to the health systems of other health facilities that received HIV/AIDS donor funding, and yet reported no input and improvement in the mentioned components of their health systems infrastructure. In addition, the negative regression exhibited in terms of physical infrastructure improvement may have been to the fact that some of the health facilities that received donor funds were not authorised to invest in physical infrastructure. Equally, health facilities that did not receive donor funding may have received funds to improve on their physical infrastructure from the Kenyan government.

5.3 Recommendations

To maintain and improve the health system of this region and the country as a whole, this study recommends continued support of HIV/AIDS funding from donors. Due to the prevailing limitations, this study recommends conducting another study (preferably multi-site), experimental in design, to compare funded health facilities (intervention arm) and non-funded health facilities (control arm) with a much wider coverage area. This kind of study would eventually analyze and investigate if there is any significant differences in contribution and improvement in the health systems. Since no other study has been done to look at the effect of HIV/AIDS donor funding on the various components of the health systems infrastructure in Kenya, more research needs to be done for comparison purposes. In addition further research needs to be carried out to determine the sustainability of the gains made in the health system infrastructure as a result of donor funds and also to evaluate the effectiveness

of donor funded health system infrastructure in comparison to non-funded health system infrastructure.

5.4 Limitations

A number of limitations were identified in the conduct of this study. The study was descriptive and only focused on the health facilities in Siaya county, yet HIV/AIDS donor funds were equally disbursed to other regions in Nyanza and the whole county.

The second is that, this study does not account for various sources of HIV/AIDS donor funding. Siaya County health facilities got funding through the PEPFAR agreements and others such as Global fund, Tuberculosis fund and other smaller donor agencies. Therefore some donor funding agencies may have had a greater impact in terms of health systems infrastructural development in comparison with others. This study did not attempt to quantify the amount or effect of the different sources of donor funding.

Despite these limitations, this study was the first to attempt to establish the effect of HIV/AIDS donor funds on the health systems infrastructure in Siaya County and in particular western Kenya.

5.5 Suggestion for further research

The study recommends further studies with a larger sample size focusing on aggregated funding. Since no other study has been done to look at the effect of HIV/AIDS donor funding on components of the health systems infrastructure in Kenya, more research needs to be done for comparison purposes.

Further research also needs to be carried out to determine the sustainability of the gains made in the health system infrastructure as a result of donor funds and to also to evaluate the

effectiveness of donor funded health system infrastructure in comparison to non-funded health system infrastructure infrastructure.

REFERENCES

- AbouZahr, C., & Boerma, T. (2005). Health information systems: the foundations of public health. *Bull World Health Organ*, 83(8), 578-583.
- Amornkul, P. N., Vandenhoudt, H., Nasokho, P., Odhiambo, F., Mwaengo, D., Hightower, A., Buve, A., Misore, A., Vulule, J., Vitek, C., Glynn, J., Greenberg, A., Slutsker, L., & De Cock, K. M. (2009). HIV prevalence and associated risk factors among individuals aged 13-34 years in Rural Western Kenya. *PLoS One*, 4(7), e6470.
- Bailey, R. C., Moses, S., Parker, C. B., Agot, K., Maclean, I., Krieger, J. N., Williams, C. F., Campbell, R. T., & Ndinya-Achola, J. O. (2007). Male circumcision for HIV prevention in young men in Kisumu, Kenya: a randomised controlled trial. *Lancet*, 369(9562), 643-656.
- Barnighausen, T., Bloom, D. E., & Humair, S. (2011). Going horizontal--shifts in funding of global health interventions. *N Engl J Med*, 364(23), 2181-2183.
- Belay, T., Abdullah, M., Mengistu, H., Ghebrekidan, K., Getaneh, E., & Mare, W. (2007). Making pregnancy safer initiative--program impact in selected pilot areas. *Ethiop Med J*, 45(2), 115-122.
- Biesma, R. G., Brugha, R., Harmer, A., Walsh, A., Spicer, N., & Walt, G. (2009). The effects of global health initiatives on country health systems: a review of the evidence from HIV/AIDS control. *Health Policy Plan*, 24(4), 239-252.
- Blas, E., & Limbambala, M. (2001). The challenge of hospitals in health sector reform: the case of Zambia. *Health Policy Plan*, 16 Suppl 2, 29-43.
- Buse, K., & Waxman, A. (2001). Public-private health partnerships: a strategy for WHO. *Bull World Health Organ*, 79(8), 748-754.
- Calain, P. (2007). From the field side of the binoculars: a different view on global public health surveillance. *Health Policy Plan*, 22(1), 13-20.

- Carmines,E., and Zeller,R. (1979). *Reliability and Validity Assessment*.Sage Publication,
Beverly Hills,California
- Chen ,H.T.(2005).*Practical program evaluation Assesing and improving
planning,implementation,and effectiveness*.Thousand Oaks,CA:Sage.
- Chuma, J., & Okungu, V. (2011). Viewing the Kenyan health system through an equity lens:
implications for universal coverage. *Int J Equity Health, 10, 22*.
- Cooper,D.R.& Schindler,P.S. (2001). *Business Research Method*(8th ed.).New Delhi:
TataMcGraw Hill.
- Delph, E. (2008). Global Vertical Programmes. The Future of Aid or a Quick Fix? Quezon
City, the Philippines. *EURODAD*.
- Dietrich, J. W. (2007). The politics of PEPFAR: The President's Emergency Plan for AIDS
Relief *Journal Ethics & international affairs, 65, 45-60*.
- Duber, H. C., Coates, T. J., Szekeras, G., Kaji, A. H., & Lewis, R. J. (2010). Is there an
association between PEPFAR funding and improvement in national health indicators
in Africa? A retrospective study. *J Int AIDS Soc, 13, 21*.
- Dutta, A., Wallace, N., Savosnick, P., Adungosi, J., Kioko, U. M., Stewart, S., Hijazi, M., &
Gichanga, B. (2012). Investing in HIV services while building Kenya's health system:
PEPFAR's support to prevent mother-to-child HIV transmission. *Health Aff
(Millwood), 31(7), 1498-1507*.
- Ejughemre, U. J. (2013). Accelerated reforms in healthcare financing: the need to scale up
private sector participation in Nigeria. *Int J Health Policy Manag, 2(1), 13-19*.
- El-Sadr, W. M., & Abrams, E. J. (2007). Scale-up of HIV care and treatment: can it transform
healthcare services in resource-limited settings? *Aids, 21 Suppl 5, S65-70*.
- Gibbs, A., Campbell, C., & Maimane, S. (2015). Can local communities 'sustain' HIV/AIDS
programmes? A South African example. *Health Promot Int, 30(1), 114-125*.

- Gonzalez Block, M. A., & Mills, A. (2003). Assessing capacity for health policy and systems research in low and middle income countries*. *Health Res Policy Syst*, 1(1), 1.
- Grepin, K. A. (2012a). Efficiency considerations of donor fatigue, universal access to ARTs and health systems. *Sex Transm Infect*, 88(2), 75-78.
- Grepin, K. A. (2012b). HIV donor funding has both boosted and curbed the delivery of different non-HIV health services in sub-Saharan Africa. *Health Aff (Millwood)*, 31(7), 1406-1414.
- Gross, R., & Bisson, G. (2009). Evaluating the President's Emergency Plan for AIDS Relief: time to scale it up. *Ann Intern Med*, 150(10), 727-728.
- Harding, R., Stewart, K., Marconi, K., O'Neill, J. F., & Higginson, I. J. (2003). Current HIV/AIDS end-of-life care in sub-Saharan Africa: a survey of models, services, challenges and priorities. *BMC Public Health*, 3, 33.
- Hayman, R., Taylor, E. M., Crawford, F., Jeffery, P., Smith, J., & Harper, I. (2011). The impact of aid on maternal and reproductive health. A systematic review to evaluate the effect of aid on the outcomes of Millennium Development Goal 5. London: 2011. EPPI-Centre, Social Science Research Unit, Institute of Education, University of London.
- IHME. (2011). Institute for Health Metrics and Evaluation - Financing global health 2011: Continued growth as MDG deadline approaches. Seattle: IHME; 2011.
- Institute of Medicine. The Future of Public Health. IOM/NAS, Washington DC, 2010.
- Institute of Medicine. The Future of Public Health. IOM/NAS, Washington DC, 2012.
- Kaushal, R., Shojania, K. G., & Bates, D. W. (2003). Effects of computerized physician order entry and clinical decision support systems on medication safety: a systematic review. *Arch Intern Med*, 163(12), 1409-1416.
- Kerlinger, F. N. (1979). *Behavioral research: A conceptual approach*. New York: Holt,

Rinehart, and Winston.

Kirigia, J. M., & Diarra-Nama, A. J. (2008). Can countries of the WHO African Region wean themselves off donor funding for health? *Bull World Health Organ*, 86(11), 889-892; discussion 893-885.

Kirunga, T. C., Ssenkooba, F., & Oliveira-Cruz, V. (2006). *Health systems reforms in Uganda: processes and outputs*

London: LSHTM

Kothari, C. R. (2004). *Research Methodology: Methods and Techniques* (2nd ed.). New Delhi: New Age International (P) Limited Publishers.

Kotzee, T. J., & Couper, I. D. (2006). What interventions do South African qualified doctors think will retain them in rural hospitals of the Limpopo province of South Africa? *Rural Remote Health*, 6(3), 581.

Leibenstein, H. (1966). *Allocative Efficiency vs 'X-Efficiency*: American Economic Review.

Levine, R., & Oomman, N. (2009). Global HIV/AIDS funding and health systems: Searching for the win-win. *J Acquir Immune Defic Syndr*, 52 Suppl 1, S3-5.

Lorenz, N., & Mtasiwa, D. (2004). Health in the urban environment: experience from Dar es Salaam/Tanzania. *Ann N Y Acad Sci*, 1023, 159-163.

Maclure, R. (1995). Primary health care and donor dependency: a case study of nongovernment assistance in Burkina Faso. *Int J Health Serv*, 25(3), 539-558.

Mandal, M., Purdin, S., & McGinn, T. (2005). A study of health facilities: implications for reproductive health and HIV/AIDS programs in southern Sudan. *Int Q Community Health Educ*, 24(3), 175-190.

Merson, M. H. (2006). The HIV-AIDS pandemic at 25--the global response. *N Engl J Med*, 354(23), 2414-2417.

Merson, M. H., Curran, J. W., Griffith, C. H., & Raganathan, B. (2012). The President's

- Emergency Plan for AIDS Relief: from successes of the emergency response to challenges of sustainable action. *Health Aff (Millwood)*, 31(7), 1380-1388.
- Michael, H. M. (2006). The HIV-AIDS Pandemic at 25 - The Global Response. *N Engl J Med* . 354, 2414-2417.
- Mills, A. (1983). Vertical vs horizontal health programmes in Africa: idealism, pragmatism, resources and efficiency. *Soc Sci Med*, 17(24), 1971-1981.
- Mirzoev, T., Le, G., Green, A., Orgill, M., Komba, A., Esena, R. K., Nyapada, L., Uzochukwu, B., Amde, W. K., Nxumalo, N., & Gilson, L. (2014). Assessment of capacity for Health Policy and Systems Research and Analysis in seven African universities: results from the CHEPSAA project. *Health Policy Plan*, 29(7), 831-841.
- MLA. (2007). Health Educ. 2005-2006; 24(3):175-90 Modern Language Association (MLA):"infrastructure." Dictionary.com Unabridged (v 1.1). Random House, Inc. Dictionary.com
- MOPHS. (2011). *Ministry of Public Health and Sanitation - Kenya health Sector Programme Support*.
- Mugenda, O.M & Mugenda A.G. (2003) *Research methods, quantitative and qualitative approaches*. Nairobi: acts press.
- Mulligan, J. A., Mandike, R., Palmer, N., Williams, H., Abdulla, S., Bloland, P., & Mills, A. (2006). The costs of changing national policy: lessons from malaria treatment policy guidelines in Tanzania. *Trop Med Int Health*, 11(4), 452-461.
- Mushi, H. P., Mullei, K., Macha, J., Wafula, F., Borghi, J., Goodman, C., & Gilson, L. (2011). The challenges of achieving high training coverage for IMCI: case studies from Kenya and Tanzania. *Health Policy Plan*, 26(5), 395-404.
- NACC. (2009). *Kenya National AIDS Strategic Plan - 2009/10 – 2012/13; Delivering on Universal Access to Services*.

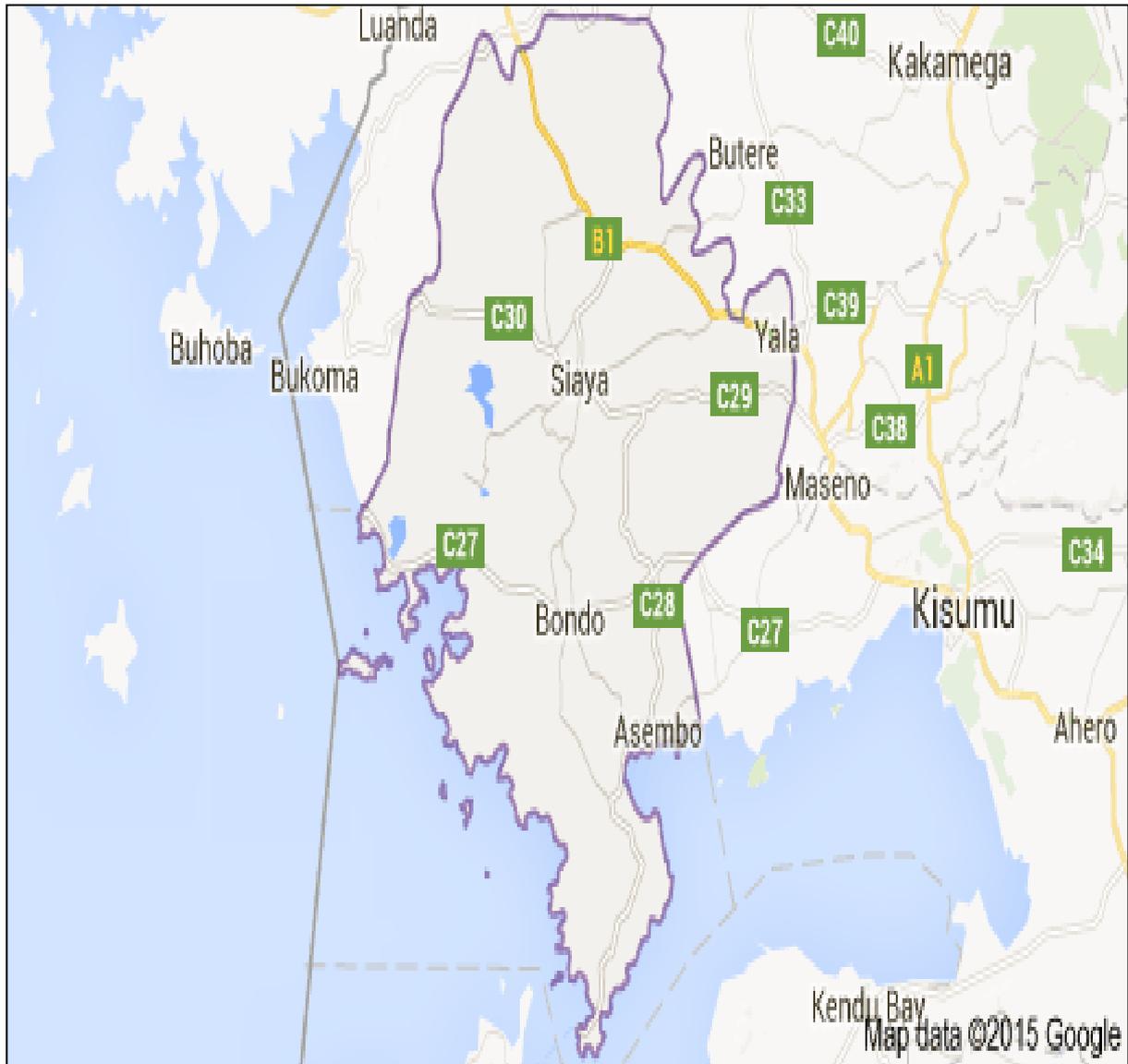
- NASCOP. (2009). National AIDS and STI Control Programme - Kenya AIDS Indicator Survey 2007, Final Report. In MOH (Ed.): NASCOP.
- NASCOP. (2013). National AIDS and STI Control Programme - Kenya AIDS Indicator Survey 2012, Preliminary Report. In MOH (Ed.): NASCOP.
- Oliveira Cruz, V., & McPake, B. (2011). Global Health Initiatives and aid effectiveness: insights from a Ugandan case study. *Global Health*, 7, 20.
- Olk, Jennifer; Wendy Richards, Godfrey & Kahn S.C. (December 25, 2013). "Choosing the Right Charitable Vehicle: A Comparison of Private Foundations, Supporting Organizations, and Donor Advised Funds". *The National Law Review*.
- Ooms, G., Van Damme, W., Baker, B. K., Zeitz, P., & Schrecker, T. (2008). The 'diagonal' approach to Global Fund financing: a cure for the broader malaise of health systems? *Global Health*, 4, 6.
- Palen, J., El-Sadr, W., Phoya, A., Imtiaz, R., Einterz, R., Quain, E., Blandford, J., Bouey, P., & Lion, A. (2012). PEPFAR, health system strengthening, and promoting sustainability and country ownership. *J Acquir Immune Defic Syndr*, 60 Suppl 3, S113-119.
- PEPFAR. (2009). *Guidance for PEPFAR Partnership Frameworks and Partnership Framework Implementation Plans Version 2.0; September 14, 2009*.
- PEPFAR. (2009). *The U.S. President's Emergency Plan for AIDS Relief: Five-year strategy*. Washington, DC: OGAC; 2009.
- PEPFAR. (2013). *Kenya Country Operational Plan 2013*.
- Pfeiffer, J., Montoya, P., Baptista, A. J., Karagianis, M., Pugas Mde, M., Micek, M., Johnson, W., Sherr, K., Gimbel, S., Baird, S., Lambdin, B., & Gloyd, S. (2010). Integration of HIV/AIDS services into African primary health care: lessons learned for health system

- strengthening in Mozambique - a case study. *J Int AIDS Soc*, 13, 3.
- Pfeiffer, J., & G.R. Salancik. (1978). *The External Control of Organisations: A Resource Dependence Perspective*. New York: Harper and Row.
- Rao, K. D., Peters, D. H., & Bandeen-Roche, K. (2006). Towards patient-centered health services in India--a scale to measure patient perceptions of quality. *Int J Qual Health Care*, 18(6), 414-421.
- Ravishankar, N., Gubbins, P., Cooley, R. J., Leach-Kemon, K., Michaud, C. M., Jamison, D. T., & Murray, C. J. (2009). Financing of global health: tracking development assistance for health from 1990 to 2007. *Lancet*, 373(9681), 2113-2124.
- Resnick, H. E., & Alwan, M. (2007). Use of health information technology in home health and hospice agencies: United States, 2007. *J Am Med Inform Assoc*, 17(4), 389-395.
- Romano, M. J., & Stafford, R. S. (2011). Electronic health records and clinical decision support systems: impact on national ambulatory care quality. *Arch Intern Med*, 171(10), 897-903.
- Samb, B., Evans, T., Dybul, M., Atun, R., Moatti, J. P., Nishtar, S., Wright, A., Celletti, F., Hsu, J., Kim, J. Y., Brugha, R., Russell, A., & Etienne, C. (2009). An assessment of interactions between global health initiatives and country health systems. *Lancet*, 373(9681), 2137-2169.
- Sepulveda, J., Carpenter, C., Curran, J., W., Holzemer, W., & Smits, H. (2007). *PEPFAR Implementation: Progress and Promise*. Washington, DC National Academies Press.
- Shakarishvili, G. (2009). *Building on health systems frameworks for developing a common approach to health systems strengthening; Prepared for the World Bank, the Global Fund, and the GAVI Alliance Technical Workshop on Health Systems Strengthening; Washington, DC. 2009.*
- Shiffman, J. (2008). Has donor prioritization of HIV/AIDS displaced aid for other health

- issues? *Health Policy Plan*, 23(2), 95-100.
- Tawfik, L., & Kinoti, S., N. (2003). The impact of HIV/AIDS on the health workforce in developing countries.
- TI. (2006). Transparency International. Global corruption report 2006: corruption and health. London: Pluto Press.
- UN. (2000). *United Nations General Assembly Fifty-fifth session, Agenda item 60 (b) United Nations Millennium Declaration.*
- UN. (2010). United Nations Millenium Development Goals.UN Department of public information. In M. 2010 (Ed.).
- UNAIDS. (2010). *Joint United Nations Programme on HIV/AIDS: UNAIDS Report on the Global AIDS Epidemic 2010, UNAIDS, Geneva.*
- UNAIDS. (2012). *UNAIDS World AIDS Day Report, 2012.*
- Wexler, J. K. (2015). Financing the Response to HIV in low- and Middle- Income Countries: International Assistance from Donor Governments in 2014. Washington DC: The Henry J. Kaiser Family Foundation .
- WHO. (2006). The impact of HIV/AIDS on the health workforce in developing countries- The world health report 2006 - working together for health.
- WHO. (2007). Everybody's business: Strengthening health systems to improve health outcomes: WHO's framework for action. Geneva: WHO; 2007.
- WHO. (2009). *Systems thinking for health systems strengthening. Geneva: WHO; 2009.*
- Wholey, J. S., Hatry, H. P., & Newcomer, K. E. (2010). HANDBOOK OF PRACTICAL PROGRAM EVALUATION.
- Yu, D., Souteyrand, Y., Banda, M. A., Kaufman, J., & Perriens, J. H. (2008). Investment in HIV/AIDS programs: does it help strengthen health systems in developing countries? *Global Health*, 4, 8.

APPENDICES

Appendix 1: Map of Study area (Siaya County)



Appendix 2: Siaya Health Facilities that participated in the study

No.	District	Health Facility
1.	Bondo	Abidha Health Center
2.	Bondo	Anyuongi HC
3.	Bondo	Bar Achuth HC
4.	Bondo	Bondo District Hospital
5.	Bondo	Gobei HC
6.	Bondo	Got Agulu Health Center
7.	Bondo	Got Matar
8.	Bondo	Kagwa HC
9.	Bondo	Kambajo HC
10.	Bondo	Kapiyo
11.	Bondo	Kunya
12.	Bondo	Mabinju HC
13.	Bondo	Madiany Sub District Hospital
14.	Bondo	Mahaya HC
15.	Bondo	Masala
16.	Bondo	Mawere Dispensary
17.	Bondo	Misori
18.	Bondo	Naya
19.	Bondo	Ndori
20.	Bondo	Nyagoko
21.	Bondo	Nyagunda

22.	Bondo	Nyamonye
23.	Bondo	Obaga
24.	Bondo	Ogam
25.	Bondo	Ongielo Dispensary
26.	Bondo	Ouya Dispensary
27.	Bondo	Oyamo Dispensary
28.	Bondo	Pap Kodero Health Center
29.	Bondo	Radier Dispensary
30.	Bondo	Saradidi Dispensary
31.	Bondo	Ulungo Dispensary
32.	Bondo	Usenge Dispensary
33.	Bondo	Usigu Dispensary
34.	Bondo	Uyawi Health Center
35.	Siaya	Akala Health Center
36.	Siaya	Ambira Health Center
37.	Siaya	Asayi
38.	Siaya	Bar Agulu
39.	Siaya	Bar Ndege Health Center
40.	Siaya	Bar Olengo
41.	Siaya	Bar Sauri Dispensary
42.	Siaya	Boro Dispensary
43.	Siaya	Dienya HC
44.	Siaya	Gongo Dispensary
45.	Siaya	Hawinga HC

46.	Siaya	Jera Dispensary
47.	Siaya	Kadenge Ratuoro Health Center
48.	Siaya	Kaluo HC
49.	Siaya	Kogelo Dispensary
50.	Siaya	Ligega HC
51.	Siaya	Lihanda
52.	Siaya	Malanga HC
53.	Siaya	Marenyo Dispensary
54.	Siaya	Masogo Dispensary
55.	Siaya	Masumbi Dispensary
56.	Siaya	Mindhine Dispensary
57.	Siaya	Mwer Dispensary
58.	Siaya	Ndere
59.	Siaya	Ngiya HC
60.	Siaya	Nyadhi Dispensary
61.	Siaya	Nyathengo Dispensary
62.	Siaya	Ogero
63.	Siaya	Ramula HC
64.	Siaya	Rwambwa Health Center
65.	Siaya	Sega
66.	Siaya	Siaya District Hospital
67.	Siaya	Sifuyo HC
68.	Siaya	Sikalame Dispensary
69.	Siaya	Simenya

70.	Siaya	Sirembe Dispensary
71.	Siaya	Tingare Dispensary
72.	Siaya	Tingwa'ngi HC
73.	Siaya	Ukwala Sub District Hospital
74.	Siaya	Umala Dispensary
75.	Siaya	Urenga
76.	Siaya	Uriri Dispensary
77.	Siaya	Wagai Dispensary
78.	Siaya	Bar Aluru Dispensary
79.	Siaya	Aro Dispensary
80.	Siaya	Yala Sub District Hospital

Appendix 3: Survey Questionnaire

This questionnaire is a data tool that is used to collect information on the effect of donor funding on the health system infrastructure in your facility, its self-explanatory and it is divided into two sections, the general information and the technical aspect.

Sec1. General Information

Management Questionnaire

1. Health facility name: _____ Date: _____

2. Health facility Level: _____

3. Which category does the facility falls? (Please tick one)

MOH

Faith Based (Specify) _____

Community

4 . Does your facility have any collaboration with a partner in offering HIV services?

Yes

No

5 .Did your facility receive donor funding for its HIV services?

Yes

No

General staffing Information

6. Number of medical staffs (MO., CO., Nurses, etc.) currently working in this facility

7.Males_____Females_____

8. Number of medical officers currently working in this facility Males_____Females_____

9. Number of Clinical officers currently working in this facility Males_____Females_____

10.Number of nursing officers currently working in this facility Males_____Females_____

11.Number of counselors (VCT, psycho-social) currently working in this facility

12.Males_____Females_____

13.Number of other(specify) staffs currently working in this facility

Males_____

Females_____

14.Does your facility have staffs whose salary are supported by donor funding?

Yes

No

a) If yes how many staffs are currently supported by donor funding in this facility?

b) What staffing carder was hired using donor funding

S. No	Staff carder	Sex	Education level

15.Are your donor funders involved in the recruitment process of the staffs?

Yes

No

If yes what roles do they play in the recruitment process?

Staff Capacity building

16. In the last one years has any staff in this organization been trained in a donor supported training?

17. What was the number of staffs trained in the last **one year** by carder?

S. No	Staff carder	Course title	Course duration	Number of staffs

18. Number of staff promoted in the last two months upon completion of a donor training course.

19. New services offered in the last two months that resulted from the donor funded training

20. Has there been any service evaluation conducted in the last quarter to evaluate the value addition accruing from the donor funded trainings?

Yes

No

21. Comment on the effect of donor funding on staffing structure and requirement within this facility

Sec 2 .Technical Information

Instructions

Following are statements about your organization as well as yourself. Please mark the response that best indicates or suits facility.

You are required to tick one of the choices above with

22 .How long have you worked in this facility (tick where applicable)

1 – 3 years

3 – 6 years

6 years +

If your answer is Yes in question no 22 above, then what is or are the names of the partners? (Separate names with a comma)

The ratings below will be adopted for some of the questions in this section:

(1= strongly Disagree =SD,2= Disagree =D,3=Neutral = N,4=Agree = A,5=Strongly Agree = SA)

Please answer question below by ticking the most appropriate response:

23. Do Partners listed in question (22) above follow the same policies as MOH?

Yes

No

24. Do Partners listed in question (22) above follow donor policies?

Yes

No

25. If your answer is No in both questions 23 and 24 above then what in your opinion are the policies guiding the operations of the Partners?

26. The partners through donor funds have had a significant contribution in terms of infrastructure in my facility.

SD

D

N

A

SA

27 .The infrastructure support by the partner's was decided by the facility and or the district health management during the fund disbursement period.

SD

- D
- N
- A
- SA

28. Technical support contributed immensely towards infrastructural improvement or development.

- SD
- D
- N
- A
- SA

29. Training of health work force, hiring of additional in my facility was based on the technical team identification of gap in HIV care and treatment and prevention.

- SD
- D
- N
- A
- SA

30. How many health care workers were hired in your facility with the support of PEPFAR funding and what was the status before?

31. Did the healthcare workers had opportunity to train?

Yes

No

32. If your answer is Yes in question 29 above what type of training were the health workers trained on?

Personal development

On job working skills

Both personal development and on job working skills

33. PEPFAR funds availability through the partners determines the level of work space expansion, lab and hospital equipment additions and records management system in my facility.

SD

D

N

A

SA

34. Did your facility have any work space expansion or structure aided by the donor funds?

Yes

No

35. If your answer is Yes in question 34 above, please specify particular expansion or structure done?

36. Over the period did your facility receive any Office, Laboratory, and Clinic equipment's furniture's or machines?

Yes

No

37. The additional furniture, equipment and machine helped improved the services and facility output.

SD

D

N

A

SA

38. Did your health facility improve on its Information technology and systems over the last two years?

Yes

No

39. What specific aspect of information system did the funding improve or develop?

Data management

Communication

Net working

All of the above

40. (For those HF that received funding), How were the HIV/donor funds availed to your health facility?

- Fund disbursement
- Technical in put
- Both fund disbursement and technical input

Thank you for taking the time to answer questions in this survey

Appendix 4: Consent document/Introductory Letter

Dear Facility in Charge,

I am an MBA student of Maseno University, Faculty of Arts and Social Sciences, School of Business and Economics, Department of Marketing & Management, I am undertaking research leading to the production of a report and publications on the subject of the Impact of donor funding on health system infrastructure facilities in Siaya District.

I would be grateful if you would volunteer to assist in this project by completing a questionnaire covering certain aspects of this topic. Approximately 15 to 20 minutes would be required.

Be assured that any information provided will be treated in the strictest confidence and none of the participants will be individually identifiable in the resulting report or other publications. A report will be made available. You are, of course, entirely free to discontinue your participation at any time or to decline to answer particular questions without facing any consequences.

Although we use email and other forms of electronic communication on a daily basis, it is my duty to remind you that the internet is not a secure medium. Any enquiries you may have concerning this project should be directed to me at the address given above or by telephone on 0725437361 or by mail sodhiambo17@yahoo.co.uk.

Thank you for your attention and assistance.

Yours sincerely

Stephen O Odhiambo

For staff consent

I have read the letter of introduction or been read to and I consent to participate in the study.

Name of staff: _____ **Sign:** _____ **Date:** _____

Witnessed by the researcher: _____ **Sign:** _____ **Date:** _____