

**INFLUENCE OF AIDS, POPULATION, HEALTH INTEGRATED  
ASSISTANT (APHIA) PLUS PROJECTS ON IMPLEMENTATION OF  
ANTENATAL CARE SERVICE IN EMBU COUNTY**

**BY**

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## **DECLARATION**

This research project report is my original work and has not been presented for a degree in any other University.

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The research project has been submitted for examination with my approval as the University supervisor.

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## **DEDICATION**

This work is dedicated to my family members, Michael, Mark and Cynthia whose support, encouragement and understanding gave me the energy to move on. May almighty God bless them.

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## TABLE OF CONTENT

DECLARATION .....	i
DEDICATION .....	ii
ACKNOWLEDGEMENT .....	iii
TABLE OF CONTENT .....	iv
LIST OF TABLES .....	vii
LIST OF FIGURES .....	viii
LIST OF ABBREVIATION AND ACRONYMS .....	ix
ABSTRACT.....	x
<b>CHAPTER ONE: INTRODUCTION .....</b>	<b>1</b>
1.1 Background to the study .....	1
1.2 Statement of the problem.....	2
1.3 Purpose of the Study.....	4
1.4 Objectives of the Study.....	4
1.5 Research Questions.....	4
1.6 Significance of the study.....	4
1.7 Delimitation of the study. ....	5
1.8 Limitations of the Study. ....	5
1.9 Basic Assumptions of the Study. ....	5
1.10 Definition of significant terms used in the study. ....	6
1.11 Organization of the study.....	6
<b>CHAPTER TWO: LITERATURE REVIEW .....</b>	<b>7</b>
2.1Introduction.....	7
2.2Implementation of Antenatal Care Services .....	7
2.3 Capacity building and training of staff and Implementation of antenatal care services. ....	8
2.4 Information Technology and implementation of Antenatal Care Services.....	11
2.5 Monitoring and Evaluation and implementation of Antenatal Care Services.....	12
2.6 Theoretical framework.....	14
2.7 Conceptual Framework.....	15
2.8 Summary of Literature Review. ....	i
2.8 Summary of Literature Review. ....	17

<b>CHAPTER THREE:RESEARCH METHODOLOGY</b> .....	18
3.1 Introduction.....	18
3.2 Research Design.....	18
3.3 Target Population.....	18
3.4 Sampling Method.....	19
3.6 Method of Data Collection.....	21
3.7 Research Instruments. ....	21
3.8 Validity of Research Instruments.....	21
3.9 Reliability of the Research Instruments.....	21
3.10 Data Analysis.....	22
<b>CHAPTER FOUR:DATA ANALYSIS, PRESENTATION AND INTERPRETATION</b> .....	25
4.1 Introduction.....	25
4.2 Questionnaire return rate.....	25
4.3 Demographic data .....	25
4.3.1 Study responses by gender .....	25
4.3.2 Age distribution of the respondents .....	26
4.3.3 Job title of the health worker (staff).....	27
4.3.4 Level of education of the staff .....	27
4.3.5 Type of healthy facility assisted by APHIA Plus.....	28
4.3.6 Working experience in the health facility .....	28
4.3.7 Period that APHIA Plus has assisted the health facility.....	29
4.3.8 Location of the health facility under study .....	29
4.3.9 Level of satisfaction with APHIA Plus assisted project in ANC Service.....	30
4.4 Influence of capacity building and training of staff and implementation of ANC Services .....	31
4.4.1 Training on project management best practice.....	31
4.4.3 Length of training of the staff by APHIA Plus.....	32
4.4.4 Programs related to ANC that were trained by APHIA Plus.....	32
4.4.5 The extent to which such training influence ANC service performance .....	33
4.4.6 Area needed for training .....	34
4.5.1Access to the IT facilities/ Equipment.....	34
4.5.2 Numbers of hours used in IT services at place of work on weekly basis.....	35
4.5.3 Activities carried out in a computer.....	36
4.5.4 Level of satisfaction in computing environment .....	36
4.5.5 Level of satisfaction with quality and reliability of IT services provided .....	37
4.5.6 Computer protection .....	37

4.5.7 People to consult in case of computer malfunction or computer crush .....	38
4.5.8 Interdepartmental computer system connection .....	38
4.6 The influence of Monitoring and evaluation on implementation of ANC Services .....	39
4.6.1 Monitoring and Evaluation of ANC services.....	39
4.6.2 Indicating whether health facility prepare progressive reports .....	40
4.6.3 Potential users of M&E .....	40
4.6.4 Method of disseminating M&E information.....	41
4.6.5 Rating M&E Reporting requirement by APHIA Plus.....	41
4.6.6 Challenges facing M&E in the health facilities.....	42
<b>CHAPTER FIVE:SUMMARY OF THE FINDINGS, CONCLUSION AND</b>	
<b>RECOMMENDATIONS.....</b>	<b>43</b>
5.1. Introduction.....	43
5.2. Summary of the findings.....	43
5.3. Discussion of the results .....	44
5.5. Recommendations of the study .....	45
5.6. Suggestions for further study .....	46
REFERENCES .....	47
APPENDIX I .....	50
APPENDIX II .....	51
APPENDIX III.....	57

## LIST OF TABLES

3.3 Target population .....	19
3.4 Operational Table.....	24
4.1. Gender of the respondents .....	26
4.2. Age of the respondents .....	26
4.3. Job title of health works .....	27
4.4. Level of education.....	27
4.5. Type of health facility.....	28
4.6. Staff working experience in years.....	28
4.7. Period of support by APHIA Plus.....	29
4.8. Location of healthy facilities .....	30
4.9. Level of staff satisfaction with APHIA Plus projects in ANC service.....	30
4.10. Whether staff are trained on project management best practices.....	31
4.11. Area of Training.....	31
4.12. Length of training of the respondent per course.....	32
4.13. Programs trained that were related to ANC services.....	33
4.14. Extent to which training influence ANC service performance.....	33
4.15. Area for further training .....	34
4.16. IT facilities accessible to the respondents.....	35
4.17. Hours spent on I.T on weekly basis.....	35
4.18. Activities carried out in a computer.....	36
4.19. Level of satisfaction in computing environment.....	36
4.20. Level of satisfaction in quality and reliability of IT services .....	37
4.21. Computer protection .....	37
4.22. People to consult in case of IT failure .....	38
4.23. Automation of computer system .....	38
4.24. Description of M&E in ANC service .....	39
4.25. Preparation of Healthy Reports .....	40
4.26. Potential user of M&E .....	40
4.27. Methods of dissemination of M&E information .....	41
4.28. Rating M&E Reporting requirement by APHIA Plus .....	41
4.29. Challenges facing M&E .....	42



## LIST OF FIGURES

Figure 1. Conceptual framework.....	16
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## **LIST OF ABBREVIATION AND ACRONYMS**

AIDS	-	Acquired Immune Deficiency Syndrome
AMREF	-	African Medical Research Foundation
ANC	-	Antenatal Care
APHIA	-	Aids, Population, Health, Integrated Assistance
FANC	-	Focused Antenatal Care
HIV	-	Human Immune-Deficiency Virus
KDHS	-	Kenya Demographic Health Survey
MCH/FP	-	Maternal Child Health and Family Planning
MDG	-	Millennium Development Goals
M&E	-	Monitoring and Evaluation
MOH	-	Ministry of Health
MMR	-	Maternal Mortality Rate
NGO	-	Non-Governmental Organization
PMTCT	-	Prevention of Mother to Child Transmission
UNAIDS	-	The Joint United Nations Program on HIV/AIDS
WHO	-	World Health Organization

## ABSTRACT

Antenatal care services are essential services that are provided to all women during pregnancy to ensure optimal health of women and their unborn babies and the care thereafter during childbirth and puerperium. The purpose of this study was to find out the influence of APHIA Plus projects on implementation of antenatal care services in Embu County. The objectives of this study included; to determine the influence of capacity building and training by APHIA Plus on implementation of antenatal services, the influence of adoption of Information Technology by AHIA Plus on implementation of antenatal care services and the influence of Monitoring and Evaluation services by APHIA Plus on implementation of antenatal care services in Embu County. A quantitative descriptive study design was adopted. The target population for this study included 126 staff working in 22 health facilities assisted by APHIA Plus. Simple random sampling method was used to obtain a sample size of 41 respondents. A standardized self-administered questionnaire was used to collect data from the respondents. Data collection was done by using questionnaires to the respondents who filled them. Data analysis was done with the help of SPSS version 16.0 and was presented by tables. The research findings revealed that implementation of antenatal care services was influenced by different factors, for examples, in capacity building and training, 82.9% of the respondents reported that they had been trained on relevant programs that were related to Antenatal care services; In adoption of the Information Technology in the health facilities, 53.1% of the respondents reported that they were able to use computers that were installed in their health facilities to type, store and dissemination data. The study findings revealed that Monitoring and Evaluation was done in the health facilities with 70.1% of the respondents reporting that the health facilities had monitoring guidelines for them to follow. However, majority, at 74.4% reported that Monitoring and Evaluation services had some challenges like lack of funds and knowledge on how to carry out such services. The study concluded that, to some extent, there was influence of capacity building and training, adoption of Information Technology and influence of Monitoring and Evaluation of Antenatal care services. The study recommended that training of staff in relevant areas of working should continue, in order to improve work performance. Adoption of Information Technology should be improved and more staff to be trained on the technology and its use so as to improve communication. Monitoring and Evaluation as an ongoing activity must be implemented at all levels in the organization to ensure continuity and smooth running of activities, efficiency and effectiveness of services.

## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.1 Background to the study**

Antenatal care services play an important role in ensuring a healthy mother and a baby during pregnancy and after delivery (MOH, 2013). The antenatal programs are designed to maximize good health outcomes, low maternal mortality, low postpartum anemia and infections and appropriate child birth weight (WHO, 2005). It is during this antenatal period and services that pregnancy, complications and risks associated with pregnancy are identified and appropriate referral or specialized case management is recommended (Down- zivin 2009). Pregnant women are given important information on danger signs during pregnancy, preventive and curative treatment, appropriate nutrition, breastfeeding and other feeding methods and family planning methods. Women also get opportunity to interact and establish a social relationship with the health care provider in preparation for child birth (Gitonga, 2011).

According to Kenya Demographic Health Survey (2010), antenatal services involve a minimum of four focused visits at specific times for all pregnant women, which include evidence based interventions such as screening for and treatment of conditions such as anemia, abnormal fetal lie, hypertension, diabetes, syphilis, malaria; counseling about diet, hygiene, HIV/AIDS, tuberculosis, tetanus immunization, birth plan and emergency preparedness and newborn care and feeding. Antenatal care services, for them to be effective must be facility based care that should be available around the clock at primary and referral sites to manage, acute and chronic problems and emergencies (WHO, 2005). These services require equipment, drugs, supplies and support such as transport and referral facilities for emergencies (Hollander,2006). However Heaman (2008) found that over 18 million African women give birth at home with no skilled care leading to risk of hemorrhages or death of their babies.

The main goal of APHIA Plus Health projects is to support the countries to realize its 2015 community strategy, a flagship program to reform Primary Health Care of which ANC is one of its components, in designing, implementing and evaluating the interventions that engage communities to promote health behaviors, (Chege 2011). APHIA Plus projects and programs support the counties to maximize their existing service delivery capacity, integrate maternal and child health among other services. APHIA Plus is financially supported by USAIDS

together with other non-governmental organizations to help communities to improve their quality of care by strengthening health facilities at district levels and below with emphasis on improving health (Chege, 2011).

The government of Kenya has worked with APHIA Plus to enhance innovative activities such as mentorship and technical zonal meetings, capacity building of staff and infrastructure development so as to address the many interconnected health needs of the women. The staff of APHIA Plus work with district stakeholders and facility management teams and align interventions with provincial and district health plans (MOH 2011). APHIA Plus project best practices to enhance ANC services in health facilities include staff capacity buildings, particularly at grassroots community level, funding for infrastructure development and purchase of supplies and equipment, adoption and improvement of Information Technology, effective monitoring and evaluation programs related to health services as well as planning for those services (Chege, 2011).

## **1.2 Statement of the problem.**

Every year an estimated 529,000 women die from complications related to pregnancy (WHO 2005) .More than 10 million children under five years die and out of this number, four million babies die before one month old (UNICEF 2017). This figure does not include the four million babies who die in the last trimester of pregnancy.

Sub-Sahara African countries carry the heaviest burden of maternal, newborn and child deaths. Studies have shown that there is a 1:16 lifetime risk of maternal deaths in Sub-Sahara Africa and newborn deaths on the continent accounts for almost 30% of the global total(MOH 2013). According to recent analysis in the Lancet, cost effective, evidence based interventions and improved health care strategies could help upto 2/3 of these newborn and child death and maternal deaths as well as even in setting of high mortality and weak health system (Rosato, et al 2008). The same study revealed that such strategies and efforts are unsuccessful due to many challenges that are faced by health facilities. Magadi et al (2009) reported that 40% women who reported health complications were due to lack of qualified health personnel, poor accessibility to health facility and poor management in the health facilities.

Chege (2011), in an evaluation study to determine the utilization of the ANC services in Nyanza Province of Kenya, found that 30% of pregnant women do not complete required number of visits, some being reported to lack consistency in visits. MOH(2011) records revealed poor monitoring and follow up of women defaulters, poor maintenance of records and inadequate infrastructure within the health facilities .The Kenya government, through its counties has realized the impact brought by poor health facilities with less equipment, staff and poor communication systems to pregnant women and their children and supported ANC activities in all the counties (MOH 2011). Moreover to encourage antenatal women to attend the clinics as per health policies, the government has rendered free service to pregnant women. MOH (2013). However, a study done by Gitonga (2013) in Kenya on the determinant of utilization of ANC services, revealed that the ANC utilization by pregnant women remains 68 – 72%, meaning that more has to be done to improve utilization of this vital service.

Hearman et al (2008) reported the importance of having improved .ANC services , especially when well-trained personnel are adequate to meet the demand of the clients and services rendered .According to Hearman et al (2008), women and babies who visited clinics at the appropriate schedules and are attended by health personnel experienced improved outcomes , fewer low birth weight babies, reduced need for neonatal intensive care and women reporting healthier babies in their first weeks of life compared with the controlled group. Similar findings were cited by KDHS(2013).

An assessment done by AMREF (2011) in Nyanza Province of Kenya revealed that the country's ANC response is hampered by constraints such as poor co-ordination, lack of resources, unqualified staff and community involvement as well as family involvement and participation in ANC services, especially in rural areas. However, more effort to improve implementation of the services called for Global funds, non-government agencies and other non-profitable organizations to intervene and develop programs that assist in improving the lives of people especially, women and children USAIDS(2012).The effort to utilize much funds doesn't guarantee effectiveness use of such services (Say & Raine, 2007). According to USAIDS (2012), greater co-ordination among the partners, the NGOs and other stakeholders must be made to ensure that resources are not wasted and actions not duplicated. Chege (2011) maintains that keeping of records for use of funds in implementation of ANC

services must be improved .This can be done only through adoption of Information Technology, and effective Monitoring and Evaluation of services.

In Kenya, IT services are poor especially in remote due to lack of electricity. According to KDHS(2011), about 40% of the total area has no electricity, meaning that if even computers can be available, IT services will be faced with challenges in communication.

### **1.3 Purpose of the Study.**

The purpose of this study was to investigate on the influence of APHIA Plus Projects on implementation of Antenatal care services in Embu County, Kenya.

### **1.4 Objectives of the Study.**

The study was guided by the following objectives:-

1. To determine the influence of capacity building and training by APHIA Plus on Implementation of Antenatal care services in Embu County.
2. To establish how adoption of information technology by APHIA Plus influences implementation of Antenatal Care Services in Embu County.
3. To establish how monitoring and evaluation by APHIA Plus influence implementation of Antenatal Services in Embu County.

### **1.5 Research Questions.**

The focus of this research was based on the following questions,

- a) How does capacity building and training of health staff by APHIA Plus influence implementation of Antenatal services in Embu County?
- b) How does adoption of information technology by APHIA Plus influence implementation of Antenatal Care services in Embu County?
- c) How does monitoring and evaluation by APHIA Plus influence implementation of Antenatal Care services in Embu County?

### **1.6 Significance of the study.**

The finding of this study was to determine how APHIA Plus projects influenced the implementation of Antenatal Care Services in Embu County. The research could also assist the government of Kenya, its counties, and other development partners to formulate health policies that are geared to improve utilization of Antenatal care services and increase more

health related facilities both in rural and urban areas. This could help reduce health related complications arising from pregnancy of a woman.

### **1.7 Delimitation of the study.**

The scope of the study was limited to Embu County. The study was carried out in four health facilities in department of MCH/FP where the ANC services are carried out. It targeted the staff working in the health facilities. The research focused on three variables namely, capacity building and training, adoption of Information Technology and Monitoring and Evaluation of ANC services.

### **1.8 Limitations of the Study.**

While carrying out research during data collection, the researcher encountered some limitations which could slightly hinder achievement of the objectives, for example, some respondents held some vital information about the projects activities assisted by APHIA Plus and the ways in which they have assisted to improve ANC service within the area of study in fear of exposing their weaknesses. Some of them feared to answer questions genuinely; some respondents were not willing to fill the questionnaires. To overcome these limitations, the researcher reassured them of their confidentiality and provided more time for them to be with the questionnaire without no supervision except where clarity was needed.

### **1.9 Basic Assumptions of the Study.**

The following assumptions were made:-

1. ANC services were readily available and accessible on daily basis
2. Staff were available in their working stations in the healthy facilities at the time of data collection
3. The respondents answered all the questions honestly and correctly.
4. Most of the questionnaires would be filled and returned.



### **1.10 Definition of significant terms used in the study.**

- Antenatal care services** - This is the care given to a pregnant woman from the time she is confirmed pregnant until she deliver a baby.
- Focused Antenatal care** - A goal oriented care approach, which is recommended by WHO, whose aim is to promote the health of mothers and their babies through individualized care.
- Maternal health** - Health of a woman during pregnancy, at birth and after delivery.
- Mortality Rate** - The number of deaths in a given area or period.
- Pregnancy** - This is the time during which one or more fetus develops inside a woman's womb.
- TetanusToxoid Injection** - A vaccine to prevent tetanus, essential for protection to both mother and baby against tetanus.
- Trimester** - A period within the pregnancy during which growth and development of fetus takes place.

### **1.11 Organization of the study.**

This study is organized into five chapters, chapter one is the introduction, covering background to the study, statement of the problem, purpose of the study, objectives of the study, research questions, significance of the study, delimitations and limitations of the study, basic assumptions and definition of significant term. Chapter two consists of literature review, which is divided into four subsections; subsection one contains information about the implementation of Antenatal services, subsection two consists of information about the influence of capacity building and training of staff delivering Antenatal care services. Subsection three comprises of information about the influence of adoption of Information Technology on implementation of antenatal services; subsection four comprises of data analysis, presentation and interpretation of the findings of the study .The study findings are provided in tables as authorized by University of Nairobi. Chapter five covers summary of findings, conclusion and recommendations and suggestions for further studies.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction.**

This chapter reviews literature on the following areas; the influence of capacity building and training of staff by APHIA Plus in implementation of ANC services, the influence of adoption of Information Technology by APHIA Plus in implementations of ANC Services and the influence of monitoring and evaluation in implementation of ANC Services by APHIA Plus. In it the researcher discussed how antenatal care services were implemented.

#### **2.2 Implementation of Antenatal Care Services**

Antenatal care refers to the regular medical and nursing care recommended for women during pregnancy (WHO 2012). Furthermore, it is a type of preventive care with the goal of providing regular checkups by doctors or midwives to prevent, detect as well as treat potential health problems that may arise in a pregnant woman (WHO 2005). Antenatal care offers a woman advice and information about appropriate place of delivery depending on the woman's conditions and status. It also offers opportunity to inform women about the danger signs and symptoms which require prompt attention from a health care provider. Furthermore, ANC may assist in abating the severity of pregnancy related complications through monitoring and prompt treatment of conditions aggravated during pregnancy such as pregnancy induced hypertension, malaria and anemia which put at risk both the life of the mother and unborn baby (WHO 2012).

Antenatal care has long been considered a basic component of any reproductive health care program. Different models of ANC have been put into practice all over the world. These models are the result of factors such as socio-cultural, historical, traditional and natural as well as economy of the particular country. Moreover, human and financial resources of the specific health system substantially play a part in building the model (Shah and Say 2007).

Most developed countries use traditional model of prenatal care which is based on larger number of visits, approximately 7-10 visits, the visits are distributed through the pregnant period to monitor both mother and fetus (Say and Raine 2007). Pregnant women in the high income counties receive adequate prenatal care which includes frequent tests and ultra sound evaluation (Annandalakshmy et al 2003). The same study revealed that such women give birth under supervision of medically trained personnel and have prompt access to emergence treatment if complications arise. On contrary, most low income counties incorporated in their

health system a new model called focused antenatal care (FAC) which has only four visits with detailed interventions in each visit.

Antenatal care service contributes to good pregnancy outcomes and quite often times benefits of ANC are dependent on the timing and quality of the care provided (UNICEF 2003). It has been shown that regular ANC is necessary to establish confidence between the women and her health care provider, to individualized health promotion messages and to identify and manage any maternal complications or risk factors (Hollander 2006), During ANC visits, essential services such as tetanus toxoid (TT) immunization, iron and folic acid tablets and nutritional education are also provided (Magadi et al 2009). Lack of ANC has been identified as one of the risk factors for maternal mortality and other adverse pregnancy outcomes in developing countries (Chege et al 2011) . Moreover, many studies have demonstrated the association between lack of ANC and perinatal mortality, low birth weight, premature delivery, pre-eclampsia, and anemia (Ahmed and Das, 2002).

In a study conducted in Mexico by Coria - sonto et al, (2006), inadequate number of visits was associated with 63% higher risk of intra uterine growth retardation. Similar results were reported in a Bangladeshi study, where birth weight was positively correlated with the frequency of visits at antenatal clinic (Ahmed and Das 2002). All these results point to the important of ANC in identifying and mitigating the potential complications during pregnancy. Moreover a study conducted in Canada by Heaman et al (2008) on inadequate prenatal care and adverse pregnancy outcomes indicated that preterm birth, low birth weight, small for age gestational and increased mortality rate, were associated with inadequate ANC. UNICEF(2003) showed similar findings in a study conducted in Finland where an increase in low birth weight infants, more fetal deaths were common among those not attending antenatal care.

### **2.3 Capacity building and training of staff and Implementation of antenatal care services.**

The main aim of every training, developmental program or project is to add value to human resource, that is, more knowledge and skills are introduced to health personnel in relation to a particular field of practice (Obisi 2011). Organizations therefore need to train their staff or improve the skills of old ones through continuous education, in order to achieve Organizational goals/ objectives (Mullins, 2002).

Shortage of health staffs aggravated by limited access in remote areas is seen to affect utilization of ANC services, for example, a study in Java by Chem et al (2003) reported that shortage of health care providers, which was reflected by a low density of health professions compared to international standard contributed to lack of quality services. Another similar study by Tilaley et al (2007) pointed out that in rural areas, along travel time worsened by road conditions prevented communities from attending ANC services. These findings indicate that the improvement of access to health services and health personnel especially in rural areas need to be a priority.

Skilled maternal and immediate neonatal care as well as emergency care for Antenatal women and new born as well as child illness must be facility based care that should be available all the time, at primary and referral sites to manage acute clinical problems as well as emergencies (Zirab 2007). However each year, 18 million African women have no skilled care and are faced with weak transport system to get to a health facility if complications arise(WHO 2012).While in most health facilities, skilled attendants are associated with child birth and management of women in labor. Some countries like Bangladesh and Philippines have taken a community approach to increasing coverage of skilled attendance high at family level in the communities (Chem et al 2003). At this first level, the skilled birth attendants and other health providers can provide evidence based interventions that include promotive and preventive services. Several recent studies have suggested that community- based strategies with various workers to promote and use the health facilities services can make a difference compared to improved maternal and child health outcomes (Rosato et al 2010), for example, in Hala Community Health Workers (CHW) were recruited , trained to deliver promotive and preventive services through community based women groups and home visits the finding of improved care seeking alongside a reduction in peri-natal mortality were encouraging (Zirab 2007).

According to Rosato et al (2010), the exact mechanisms through which community support group lead to improved prenatal survival are complex and not well understood. These might affect a range of issues such as women's empowerment, increased awareness and development of social capital affecting household and family practices and care seeking for many poor rural communities. There is a pervasive sense of fatalism around maternal and

child care and those support group counseling and promotion of positive behaviors(WHO, 2005).

Capacity building and training of staff by APHIA Plus remains one of its strategies to attempt to fulfil the millennium goals 4&5 which focus on maternal health and child health so as to reduce mortality and mortality rates among women and children. In order to achieve the above, APHIA Plus projects are geared not only to improve the wellbeing of an individual but also promote healthful living through sustainable projects that will lead to long life. The non-governmental organizations (NGO's) including APHIA Plus have built capacity of its workforce especially in health sector in all aspects of projects which include project strategic planning, needs assessment, work plans, budgeting, implementation and monitoring and evaluation programs (Chege, 2011).

Improving the capacities of local technical staff trainer and working activities among the staff working in ANC programs and other health related programs such as HIV/AIDS malaria and TB improve their knowledge and practical experience. This in turn will lead to more effective and efficient operating group of profession (Chege 2011). In leadership and capacity building, APHIA Plus tries to offer technical assistance to help community based groups, voluntary & private organization and government agencies fulfill their mission (Zirab, 2007). The project staff trains leaders from various sectors to craft on the general strategies for common health problems (MOH, 2013).

Recently, APHIA plus has come up with capacity development support which is designed to mitigate the impact of poor health especially to pregnancy women, HIV and TB patients. The main objectives included supporting the provision of sustainable high quality services through practical approaches that address specific needs, developing institutional capacity and increasing the effectiveness of local partners for the purpose of expanding sustainable high quality services and enhancing the local partners, treatment, prevention and care (Chege,2011).

The capacity development support project use various methods of capacity development which include; standardized training which is a competency based training, followed up by support to ensure the application of new knowledge and training that focuses in specific needs and challenges; mentoring and coaching and communities about practice whereby the

stakeholders are allowed to discuss issues and challenges; share tools and resources, exchange information and lessons. In turn, learners develop problem solving techniques (Chege 2011).

Training of people working in any organization has its benefits in that it improves the performance of its people (Kabiru, 2009). Some organizations perceive it to be very expensive but it is worth. The ultimate duty of APHIA Plus project is to assess both public and private hospitals and their financial viability and offer guidance in developing the human resource and policies necessary for sustainability. Materials are also developed to strengthen the capacity of the organization and to enable them to properly manage donated funds from USAIDS and other countries (MOH, 2012).

#### **2.4 Information Technology and implementation of Antenatal Care Services.**

Advance in technology has made most of health activities possible, Because of improved technology; communication is faster and has gone from sending a mail to instant messaging through modern applications in soft wares (Blokiglye, 2007). Project management software has also been created a breakthrough in technology that has various uses and functions.

Information Technology is a supporting system that provides simple actionable information to decision makers, thereby enabling the continuous planning and execution strategy (Dinamore and Cabanis 2011). IT fibers are used by highly performing organizations to monitor and evaluate projects, control risks and manage finances across portfolios. It also provides information on the availability of resource(Kabiru,2009). However information, communication and technology should not be directed to services alone but through people's ability to use such technologies and service effectively to address their own needs and to allow them dialogue to be heard and to learn to participate in community life and demonstrate processed and ultimately to improve their livelihoods (FAO, 2007).

Recently APHIA Plus developed a program; Communication for Health (C4H) which actively worked with several USAIDS projects, sector works and evaluate for Health (E4H). Other partners include National population council and UNICEF. Activities ranged from social behavior change communication and coordination (SBCC), material development , pretesting, strategic, planning monitoring and evaluation to consultative meeting, document exchange and review experience, sharing and leveraging resource to carry out joint activities

within government and MOH (Mulwa, 2008). In addition to such activities CD, flash disks and other software storage gadgets are exchanged for easy access to information.

In strengthening Ministry of Health, capacity for service delivery increasingly require that attention be given to their ability to manage, implement and integrate information communication technology into their work. Nevertheless affordability and sustainability of such technology remains a challenge to many especially in rural areas because of financial constraints. However funds and donations are often obtained from donor agencies to improve technology infrastructure and its functions (FAO, 2007). Some of the rural set ups are also served with electricity that easy information technology (MOH, 2013)

### **2.5 Monitoring and Evaluation and implementation of Antenatal Care Services.**

Monitoring and evaluation are concurrently used by many organizations even though they have different meaning Monitoring is the regular observation and recording of activities taking place in a project or a program. Monitoring is the routine collection and analysis of information to track progress against set plans and check compliance to establish standards Lori(2014) defines monitoring as an art of collecting the necessary information with minimum effort in order to make a steering decision at the right time. Monitoring focuses collection of routine data that measure progress towards achieving project program policy or objectives (Mulwa, 2009).

Project monitoring is a necessary component of all project management plans. Without project monitoring, organization may fail to understand where they go astray and even successful projects may have insufficient impact. The project coordinators or project leaders and their supervisors should plan how, where and when monitoring should be carried out throughout the implementation period (Lori, 2014). It is the role of the project supervisors to ensure implementation of project as effectively and efficiently as possible.

Evaluation involves identifying and reflecting upon the effects of what has been done, and judging their worth. It is a process that aims to determine systematically the objectiveness, efficiency, sustainability and or impact of an intervention of project or program Mulwa(2009) defines evaluation as a process that involves periodic and systematic collection, analyses and interpretation of project related data. Its aim is to provide valuable management information,

judge the value and merits of an intervention and draw lesson for future action and decision making.

Monitoring and evaluation contribute to the strengthening of information, human resource capacity building and professional financial management. The success or failure of ANC service will depend on consistency in monitoring and evaluation of such a program. M&E are not only based on project objectives adherence but also the ability to make adjustment to address challenges, obstacles and opportunities as they arise (Mulwa, 2009). In ANC services, this activity should be done in line with the requirements and expectations of APHIA Plus project, activities, services, costs and other resources need to be compared with the set standards and any deviation need to be collected as project advances (Mulwa, 2009).

APHIA Plus incorporates evaluation at the program design stage to ensure their research and projects activities produce useful results (Chege, 2011). Planning an intervention and designing an evaluation strategy are always inseparable activities. In addition, collaboration between project designers and local stakeholders in outlining the process help to ensure the relevance sustainability and avoidance of duplication of evaluation activities (Obisi 2011). In most cases, the APHIA Plus project leaders have formulated survey guideline for M&E that are supplied to institutions dealing with maternal health and community health. The local stakeholders are also trained so as to develop the capacity of the County health officials to lead subsequent analysis. APHIA Plus has developed a group of experts who continue to develop innovative techniques and technologies in the global dialogue on the role of surveillance in addressing health issues (Kabiru, 2009). These guidelines help the programs to determine accurate target numbers and implementation strategies and allow them to advocate effectively for their beneficiaries (Obisi 2011).

According to Mulwa (2009), M&E provide project staff with a clear basis for decision making, enables project staff to strengthen the performance of their projects thus increasing impact of project results to the beneficiaries. M&E give the project manager ability to maintain control of the project by providing him/ her with information on the project status at all times. It promotes greater transparency and accountability in terms of use of project resources and information obtained (WHO 2012). M&E can be used in future for project planning and development (Mulwa 2009).



M&E provides a better means of learning from past experience, improving service delivery, planning and allocation resource and demonstrability to key stakeholders (World Bank 2004). One can also learn the reasons as to why implementations of certain interventions are not workable (USAID 2012).

## **2.6 Theoretical framework**

According to Karuru (2011) a theoretical framework is a collection of interacted concepts, like a theory but not necessarily so well worked out. This study is based on Constraints theory. This theory is applicable in production planning, production control, project management and performance measurement (Blackstone 2010) .Its main objective is to identify and detect problems that would arise from the process or system, so as to rectify or improve performance (Blackstone 2010).

According to Rand (2000), Constraints theory is based on the facts that, like a chain with its weakest link, in any complex system at any point at a time, there is most often only one aspect of that system that is limiting its ability to achieve more of its goals. Blackstone (2010)maintains that, for a system to attain any significant improvement that whole system must be managed with it in mind.

According to Rand (2000), the Constraints theory have five steps namely:-

- i. Identify the system constraints
- ii. Decide how to exploit the system constraints
- iii. Subordinate everything else to the above decision
- iv. Elevate the system constraints and
- v. Go back to step 1 if in any previous steps constraints has been broken and do allow Inertia to cause a system constraint

The main purpose of the project is to meet its goal and objectives. All managers must be focused on tasks that make up the project (Mullins 2002). This has to be made possible if all the necessary resources to perform tasks are provided. Lack of provision of such resources make projects constrain and work become difficult to achieve, thus implementation of a services becomes either slowed down, stopped prolonged or in effective (Karuru, 2011)

## **2.7 Conceptual Framework**

According to Kothari (2006), a conceptual framework is defined as a basic structure that consists of certain blocks which represent the observational, the experimental and the analytical or synthetically aspects of a process or system being conceived. The interconnections of these blocks complete the framework for the expected outcomes. This is the way ideas are organized to achieve a research project purpose. Mugenda and Mugenda (2003) states that a conceptual framework layout the key factors or variables and presumes relationship among them. The figure below shows the conceptual framework that has three major independent variables and their influence on implementation of ANC services in Embu County. These include the influence of capacity building and training of staff, influence of adoption of information technology and the influence of monitoring and evaluation of utilization of ANC services by Aphid Plus.

## Conceptual framework

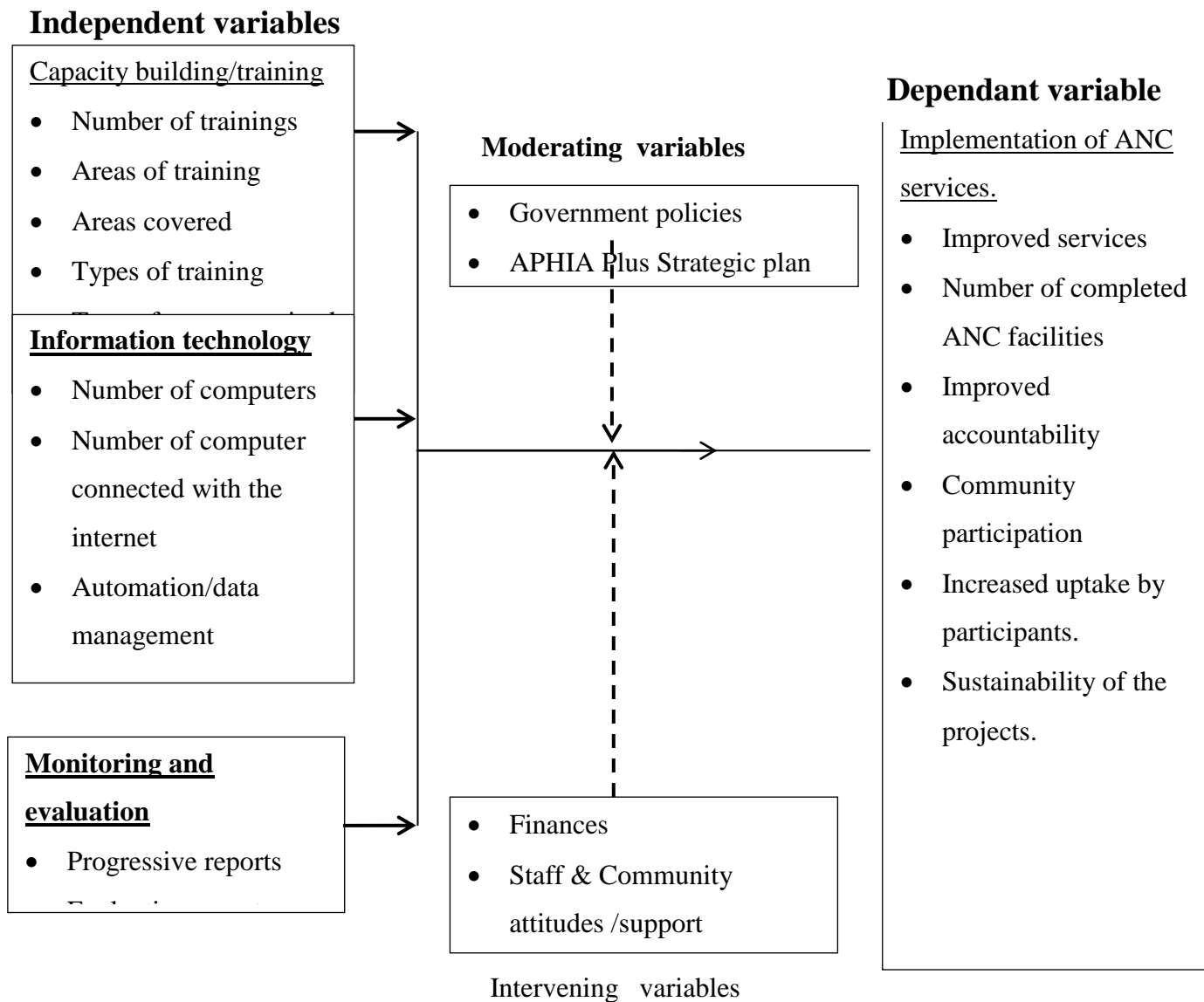


Figure 1. Conceptual framework

## **2.8 Summary of Literature Review.**

Literature review can be summed up into the concept of antenatal care services, its components and ways of implementing it. Details of how capacity building and training of staff influence antenatal care service delivery are outlined. Other two variables included are adoption of Information Technology and Monitoring and Evaluation of antenatal care service. The last two variables deal with information generation, storage and dissemination because keeping and maintaining records in any organization is very important. Activities, use of resources and work performance need to be monitored and evaluated from time to time as a measure to assess the progress and to do corrective measures as mistakes arise.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction.**

This chapter focused on the research design, target population, research methodology, sampling method, data collection method, validity and reliability of data instruments, data analysis and ethical consideration.

#### **3.2 Research Design.**

In this study, the researcher used quantitative research design. Quantitative research is essentially about collecting numerical data to explain a particular phenomenon (Mugenda and Mugenda 2003). This involved a descriptive study, in which the information was collected without changing the environment, a description of how the APHIA Plus projects influenced the implementation of Antenatal care services in Embu County. Through this design, the researcher was able to interact with the respondents through interview to collect necessary information, thus a relationship or association between APHIA Plus activities/projects and their influence on health in health facilities was also demonstrated.

#### **3.3 Target Population.**

Target population refers to the entire group of individuals or objectives to which the research is interested in generalizing the conclusion (Wimmer and Dominick 2011).

According to Kothari (2006) a target population consists of members of a group or population under study. In this study, there are directly benefit from APHIA plus projects. There are 126 staff working in these facilities. therefore the target population for this study is 126 staff working staff. The table 3.3 illustrated healthy facilities and number of staff rendering ANC services.

**Table 3.3 Illustrates the numbers of health facilities and their working staff.**

<b>Health facilities</b>	<b>Number of staff</b>
1. Nembure H/C	7
2. Kithimu H/C	4
3. Ena Dispensary	4
4. Kithegi Dispensary	3
5. Embu County Hospital	14
6. Gatunduri H/C	4
7. Dallas Dispensary	7
8. Kangaru Dispensary	3
9. Kiritiri H/C	8
10. Kiambere Dispensary	4
11. Gategi Dispensary	3
12. Makima Dispensary	4
13. Nthagaiya	4
14. Karurumo H/C	11
15. Kathanjuri H/C	7
16. Kathunguri Dispensary	3
17. Runyenjes Subcounty hospital	14
18. Ishiara Subcounty hospital	6
19. Siakago Subcounty Hospital	7
20. Kanyuambora	3
21. Machang'a Dispensary	3
22. Kathangari Dispensary	3
<b>TOTAL</b>	<b>126</b>

### **3.4 Sampling Method.**

This section described the strategies that were used to identify the main categories of respondents for the study. A sample is a smaller collection of units from a population used to determine truths about that population (Field, 2005). In quantitative research, one attempts to select a sample in such a way that it is unbiased and represents the population from where it is selected (Kumar, 2011). The purpose of sampling in quantitative research is to draw

inferences about the group from which one has selected the sample. Mugenda and Mugenda (2003) suggested that for a descriptive study, ten percent or above of the accessible population is enough for the study. The danger with smaller samples is that they do not reproduce the salient characteristics of the accessible population to an acceptable degree (Cohen, Marion and Morrison, 2011).

The four health facilities were selected by simple random sampling. In simple random sampling method, the entire population of (N=126) had equal chance of inclusion in the sample. According to Kothari (2006), random sampling follows the Law of “Statistical Regularity” that stated that if an average, the sample chosen is random one, then the sample will have the same composition and characteristics as that of the whole population. The four health facilities were selected out of the total health facilities that had received assistance from APHIA Plus. They included Dallas Dispensary, Kirirtiri H/C, Runyenjes Hospital and Embu County Hospital.

### 3.5 Sample size determination

There were 43 staff working in the four randomly selected health facilities for this study. Using Krejcie and Morgan 1970 formula, a sample size of 41 respondents were realized as a sample frame. Krejcie and Morgan (1970) to determine sample size is as follows;

$$S = \frac{x^2 NP(Q - P)}{d^2(N - 1) + x^2 P(Q - P)}$$

**Where**

- S=Required Sample Size
- X= Z value (e .g 1.96 for 95% confidential level)
- N=Population Size
- P= Population proportion (expressed decimal)
- D= degree of accuracy (%), expressed As a proportion (0.05) or margin error
- $x^2$  =Chi-square for i.d.f at 95% confidential level

The sample frame from calculations was = 41 Respondents

### **3.6 Method of Data Collection.**

The data for this study was collected through questionnaires. The researcher intended to use this method because questionnaires were free from bias of interviewer and the respondents had adequate time to give well thought out answers (Mugenda and Mugenda 2003). Data on issues like training of staff on ANC services, training and use of modern methods of Information Technology and information on Monitoring and Evaluation by APHIA Plus were also obtained.

### **3.7 Research Instruments.**

The research instruments were questionnaires which were given to the respondents in health sector, that is, the staff in the health facilities. According to Kothari (2006), a questionnaire consists of a number of questions printed or typed in a definite order on a form or set of forms. The questionnaire consisted of both closed and open ended questions. Closed questions consisted of a fixed set of questions to be answered in a specified sequence and with a designated response options. Open ended questions provided participants with opportunities to reveal information in a naturalistic way. The questionnaire was divided into four sections. The first section comprised of the respondents bio-data questions whereas the remaining three comprised of variables which the researcher intended to research on. A total of 50 questionnaires were produced.

### **3.8 Validity of Research Instruments.**

Validity is the ability of an instrument to measure what it is designed to measure. Kothari (2006) stated that validity is the most critical criterion and indicated the degree to which an instrument measures what is supposed to measure. In other words, validity is the extent to which differences found with a measuring instrument reflect true difference among those being tested. To ensure validity of the instruments, the questionnaire was reviewed with the help of the supervisor on its relevance to the topic under study. There was also peer proof reading and editing to ensure the content validity of the instruments. This ensured the meaningfulness and usefulness of the instruments.

### **3.9 Reliability of the Research Instruments.**

Reliability refers to the consistence of scores obtained after repeated trials (Mugenda and Mugenda, 2003). According to Boit, Wangare and Magero (2009), reliability is concerned with consistency in the production of the results and refers to the requirement that, at least in



principle, another occasion, can be able to replicate the original piece of research and achieve comparable evidence or results, with similar or same study population. A measuring instrument is reliable if it provides consistent results (Kothari, 2006).

To enhance reliability of the data collected, the researcher employed split-half technique. This method estimates internal consistency by dividing the scale into halves, and then correlating the scores on these halves. A high correlation indicates that the two sets yield consistent information (Hayes, 2008). The following Spearman Brown formula was used to calculate the reliability.

$$\begin{aligned}
 \text{Reliability of scores on total test} &= \frac{2 \times \text{reliability for } 1/2 \text{ tests}}{1 + \text{reliability for } 1/2 \text{ tests}} \\
 &= \frac{2 \times 0.667}{1 + 0.667} = 0.80024 \\
 &= 0.8
 \end{aligned}$$

A correlation coefficient of 0.8 was obtained. According to Kothari (2006) an instrument that yields a reliability coefficient of 0.8 and above was reasonably consistent and therefore acceptable for data collection.

### **3.10 Data Analysis.**

The primary data collected was sorted, edited, coded and analyzed. This data quality checks eliminated errors or point of contradiction in data. The purpose of coding was to classify or arrange the question answers into meaningful categories so as to bring out their essential pattern. The researcher tabulated the quantitative data for each research question. This process gave a comprehensive picture of how the data looked like and assisted the researcher in identifying patterns. This was done by constructing frequency and percent distribution in order to determine if scores were entered correctly, scores were high or low, how many were in each category and the spread of the scores (Kothari, 2006). This was done using SPSS version 16.0. The SPSS helped to spot data entry errors or unusual data points. It had a full set of statistical tests, was easy to run similar reports and graphics for subsets and better output organization (Mugenda and Mugenda, 2003).

### **3.11 Ethical Consideration.**

These included respect for the respondents, confidentiality, trust, openness and carefulness among other issues. The respondents were informed of the purpose of the study and there were no names of the respondents required.

Permission and clearance to carry out the research was obtained from National Commission for Science, Technology and Innovation. Letter of introduction to the area of the study was issued. Code numbers were used in the questionnaires to present both the respondent's name and that of the health facility.

### 3.12 Operationalization Table

#### 3.4 Operationalization table

Objectives	Type Of Variables	Indicators	Measurement Scale	Data Collection Method	Data Analysis
To establish how training of health workers on contents of ANC and its Services by APHIA Plus influence implementation of ANC services in Embu County Kenya	Independent variable:- Training.	Number. of training Areas covered Type of training	Interval/ Nominal	Questionnaire	Correlational and descriptive statistics
To establish how adoption of information technology by staff influence implementation of ANC services in Embu County, Kenya	Independent variable:- information technology.	Number of computers Number of staff who are computer literate	Ratio / Nominal	Questionnaire	Correlational and descriptive statistics
To determine how monitoring and Evaluation by APHIA Plus Influence implementation of ANC Services in Embu County, Kenya	Independent variable:- monitoring and evaluation	Progressive, reports, evaluation reports	Nominal	Questionnaire	Correlational and descriptive statistics

## **CHAPTER FOUR**

### **DATA ANALYSIS, PRESENTATION AND INTERPRETATION**

#### **4.1 Introduction**

The study assessed the influence of APHIA plus projects on implementation of antenatal care services in health facilities of Embu country. This chapter dealt with data analysis, presentation and interpretation of the findings of the study based on the following objectives;- to determine the influence of capacity building and training by APHIA Plus on implementation of ANC service, to establish how adoption of information technology by APHIA Plus influenced implementation of ANC service and finally to establish how monitoring and evaluation by APHIA Plus influenced implementation of ANC services in Embu County. Data was analyzed and interpreted using tables as authorized by University of Nairobi.

#### **4.2 Questionnaire return rate**

The questionnaire return rate was 100% as all 41 questionnaires were filled and returned. This was possible because the questionnaires were administered by the researcher herself. The respondents were assisted to understand the questionnaires. The questionnaires were collected immediately upon completion.

#### **4.3 Demographic data**

This section discussed the respondent's genders, age, job title, working experience and education. Information about the type of health facility and its location in Embu County where APHIA Plus had assisted in implementation of ANC service was also obtained.

##### **4.3.1 Study responses by gender**

The respondents from the four health facilities in Embu County working in the departments where ANC Services were rendered were asked to state their gender. The responses are shown in Table 4.1

**Table 4.1 Gender of the respondents**

<b>Gender of Respondent</b>	<b>Frequency</b>	<b>Percentage (%)</b>
Male	15	36.6
Female	26	63.4
<b>Total</b>	<b>41</b>	<b>100</b>

From the Table 4.1, the study findings indicated that 15 respondents (36.6%) were males while 26 respondents at 63.4% were females. This showed that more women compared to men worked in the department at the time of the interview.

#### **4.3.2 Age distribution of the respondents**

The respondents were asked to indicate their age from among choices of classes given in Table 4.2

**Table 4.2 Age of the respondents**

<b>Age group in years</b>	<b>Frequency</b>	<b>%</b>
≤ 30	7	17.1
31-40	17	41.5
41-50	11	26.8
>50	6	14.6
<b>Total</b>	<b>41</b>	<b>100</b>

The Table 4.2 showed that age group 31-40 years was having the highest number of staff at 41.5%, followed by age group 41-50 years at 26.8%. The staff aged 30 years and below formed 17.1% while those above 50 years were 14.6%. The findings of the above study revealed that majority of the staff (68.3%) conducting ANC services were in their middle age hence a mature group responsible for handling ANC clients.

### 4.3.3 Job title of the health worker (staff).

The respondents were asked to indicate their job title in the place of work. This was shown in the Table 4.3

**Table 4.3 Job title of health worker**

<b>Job title</b>	<b>Frequency</b>	<b>%</b>
Head of health facility	4	9.8
Head of department	4	9.8
Doctor in service	2	4.9
Nurse	14	34.1
Clinical officer (CO)	8	19.5
Community health worker (CHW)	6	14.6
Others e.g. lab, pharmacy etc.	3	7.3
<b>Total</b>	<b>41</b>	<b>100</b>

The Table 4.3 showed that nurses comprise the largest group of health workers at 34.1% followed by Clinical Officers at 19.5% and Community Health Workers at 14.6%. These findings reveal that these are cadres who directly offer services to clients and are in contact with them.

### 4.3.4 Level of education of the staff

The respondents were requested by the researcher to indicate the level of their education. Table 4.4 revealed this information

**Table 4.4 level of education**

<b>Level education</b>	<b>Frequency</b>	<b>%</b>
Certificate	11	26.8
Diploma	24	58.6
Degree	6	14.6
Post graduate	-	-
<b>Total</b>	<b>41</b>	<b>100</b>

The Table 4.4 showed that slightly more than half (58.6%) of the working staff had acquired diploma, followed by 26.8% of staff with a certificate. Only 14.6% had acquired a degree.

These result showed that all staff working had formal education and had health profession related courses before they were deployed to their clinical areas of practice.

#### 4.3.5 Type of healthy facility assisted by APHIA Plus

The respondents were asked to indicate the type of health facility assisted by APHIA Plus. This was shown in Table 4.5

**Table 4.5 Type of health facility**

Type of health facility	Frequency	%
Dispensary	7	17.1
Heath center	8	19.5
Sub county hospital	13	31.7
County hospital	13	31.7
Other specify	-	-
<b>Total</b>	<b>41</b>	<b>100</b>

Table 4.5 showed that majority of the staff interviewed were from the sub-county hospitals and County hospitals at 63.4%. Staffs from the dispensaries and Health Centers were at 19.5% and 17.1% respectively.

#### 4.3.6 Working experience in the health facility

The respondents were asked to indicate their work experience in years in the health facility. Table 4.6 showed the number of years of working staff among the choices given.

**Table 4.6 Working experience in years.**

Work experience (years)	Frequency	%
below 5 Year	13	29.3
6-10	13	31.9
11-15	3	7.3
16-20	9	21.9
Above	4	9.8
<b>Total</b>	<b>41</b>	<b>100</b>

Table 4.6 showed the years of service of workers in the health facility. Among those who were interviewed, most of the staff at 31.7% served between 6-10 years, followed by those who served between 0-5 years at 29.3%. Those served between 16-20 years comprised of 21.9% and those served for more than 20 years were at 9.8%. Only a small group of staff had a working experience of between 11-15 years formed the least percentage at 7.3%. This showed that all staff had some working experience thus had developed skills and expertise in their job.

#### **4.3.7 Period that APHIA Plus has assisted the health facility**

The respondents were asked to indicate the length of period that APHIA Plus had continued to support the health facility. They gave the following responses according to the choice of classes below as shown in Table 4.7

**Table 4.7 Period of support by APHIA Plus**

<b>Number of Years</b>	<b>Frequency</b>	<b>%</b>
below 3 Year	7	17.1
4-6	28	68.3
7-10	6	14.6
Over 10	-	-
<b>Total</b>	<b>41</b>	<b>100</b>

Table 4.7 showed that APHIA Plus had worked with the health facilities and offered their support in such facilities. More than half of the respondents (68.3%) reported that APHIA Plus had assisted for a period between 4-6 years, 17.1% reported having been assisted in a period between 7-10 years. Only 14.6% reported years of support by APHIA Plus to be up to 3 years. This shows that all the health facilities under interview were assisted and supported by APHIA Plus.

#### **4.3.8 Location of the health facility under study**

The respondents were asked to indicate the location of their health facility under study. They gave the following responses below in Table 4.8.



**Table 4.8 location of the healthy facility**

<b>Location of health facility</b>	<b>Frequency</b>	<b>%</b>
Embu West	20	48.8
Embu North	-	-
Embu East	11	26.8
Mbeere North	-	-
Mbeere South	10	24.4
<b>Total</b>	<b>41</b>	<b>100</b>

The Table 4.8 showed the area of location of health facilities where respondents were interviewed. The Table showed that the highest number of respondents interviewed were from Embu West at 48.8 % followed by those from Embu East at 26.8 % and the least respondents interviewed were at 24.4% from Mbeere South.

#### **4.3.9 Level of satisfaction with APHIA Plus assisted project in ANC Service**

The respondents were asked by the researcher to state their level of satisfactory as far as APHIA Plus projects are facilitated in their health facilities.

Table 4.9 showed their level of satisfaction

**Table 4.9 Level of staff satisfaction with APHIA Plus project in ANC services.**

<b>Level of satisfaction</b>	<b>Frequency</b>	<b>%</b>
Very satisfied	17	41.5
Satisfied	23	56.1
Neither satisfied nor dissatisfied	1	2.4
Dissatisfied	-	-
Very dissatisfied	-	-
<b>Total</b>	<b>41</b>	<b>100</b>

Table 4.9 illustrates the level of staff satisfaction with the services of APHIA Plus which revealed that out of 41 respondents, 91.6% were satisfied with APHIA Plus assisted projects and only 2.4% did not indicate their level of satisfaction. This showed clearly that the staff appreciated the work done by APHIA Plus team.

#### 4.4 Influence of capacity building and training of staff and implementation of ANC Services

This section examined how staff capacity building and training by APHIA Plus influenced implementation of antenatal care services in the healthy facilities. Variables such as type of project training, duration of training, health related programs directly affecting ANC services were also explored.

##### 4.4.1 Training on project management best practice

The respondents were requested to indicate whether or not they had been trained on the project management best practices. The Table 4.10 showed their response

**Table 4.10. Whether trained on project management best practices**

Whether trained or Not	Frequency	%
Yes	34	82.9
No	7	17.1
<b>Total</b>	<b>41</b>	<b>100</b>

The Table 4.10 showed that majority of the staff (82.9%) had been trained on project management best practices by APHIA Plus. Only a few (17.1%) had not been trained.

##### 4.4.2 Area of training by APHIA Plus

The respondents were asked to indicate areas where they were trained by APHIA Plus. Table 4.11 showed area of training of the respondents.

**Table 4.11 Area of training**

Areas of training	Frequency	%
Leadership	-	-
Implementation of services	23	56.1
Monitoring and Evaluation	1	2.4
Information technology	2	4.8
Equipment maintenance	8	19.5
Budgeting	-	-
Others- specify	-	-
Not trained at all	7	17.2
<b>Total</b>	<b>41</b>	<b>100</b>

The Table 4.11 showed that almost all respondents (82.8%) interviewed had been trained on one or more best practices in project management. It is only 17.2% of the respondents reported that they had not been trained in any of the practices. Those that trained in M&E fell at 2.4%, those trained in Information Technology at 4.8%, those trained on equipment maintenance were 19.5%. From the Table 4.11, the researcher concluded that majority of the respondents interviewed had received some form of training.

#### 4.4.3 Length of training of the staff by APHIA Plus

The respondents were asked by researcher to indicate the period they took during training by APHIA Plus. The Table showed their response.

**Table 4.12 Length of training of the respondent per course**

<b>Period of training (weeks)</b>	<b>Frequency</b>	<b>%</b>
Less than a week	-	-
1-5 weeks	31	75.6
3-4 weeks	5	12.2
More than 4 weeks	-	-
Not trained (nil)	5	12.2
<b>Total</b>	<b>41</b>	<b>100</b>

The Table 4.12 showed that majority of the respondents (75.6%) trained between 1-2 weeks per course. Only few respondents (12.2%) were trained between 3-4 weeks. A small group at 12.2% did not train at all. This showed that most of APHIA Plus training lasted between one and two weeks.

#### 4.4.4 Programs related to ANC that were trained by APHIA Plus.

The respondents were asked to indicate other courses related to ANC by APHIA Plus. They mentioned the following courses as showed below in Table 4.13.

**Table 4.13 Programs trained that were related to ANC services**

<b>Type of training</b>	<b>Frequency</b>	<b>%</b>
Immunization	8	14.8
ANC Profile	35	64.8
Equipment maintained	6	11.1
Not trained	2	3.7
Others( PMCTC, PITC)	3	5.6
<b>Total</b>	<b>41</b>	<b>100</b>

The Table 4.13 showed that most respondents (90.7%) were trained in health programs related to antenatal care services except two respondents at 3.7%. A few respondents at 5.6% were trained in other areas such as prevention of mother to child transmission of HIV/AIDS and Patient Initiative Testing and Counseling which are also included in ANC services.

#### **4.4.5 The extent to which such training influence ANC service performance**

The respondents were asked to indicate the extent to which such training influence ANC performance. Table 4.14 shows their response.

**Table 4.14 Extent to which training influence ANC service performance**

<b>Extent</b>	<b>f</b>	<b>%</b>
Very great extent	3	7.3
Great extent	23	56.1
Fair extent	25	36.6
Little Extent	-	-
<b>Total</b>	<b>41</b>	<b>100</b>

The Table 4.14 indicated that every respondent has appreciated the training to some extent, and agreed that such training had influence over ANC service performance with 56.1% of the respondents reporting that training influenced ANC services to a greater extent. 36.6% of the respondents reported that ANC services were influenced fairly.

#### 4.4.6 Area needed for training

The respondents were asked to indicate the area they would like to be trained on in order to improve ANC Service. Table 4.15 shows their response

**Table 4.15 Area for further training**

<b>Area for further training</b>	<b>Frequency</b>	<b>%</b>
Leadership	4	9.8
Budgeting	1	2.4
Care of Equipment	10	24.4
M&E	10	24.4
I.T	16	39.0
<b>Total</b>	<b>41</b>	<b>100</b>

Table 4.15 showed that the respondents felt that they needed further training by APHIA Plus on the above mentioned courses .24.4% of the respondents indicated that they needed M&E training, 39% of respondents indicated that they needed I.T training, while 9.8% and 24.4% of respondents needed leadership and care of equipment respectively. From the above Table 4.13, it showed that the respondents were eager to learn new skills in different areas in order to improve their performance.

### 4.5 Influence of adoption of Information Technology in ANC services

This section examines how adoption of Information Technology influenced implementation of antenatal care services. The section explores the type of IT facilities available and accessible to the staff, the utilization of IT assets and services, different activities the respondent carry out using IT and whether the computers used were protected or not.

#### 4.5.1 Access to the IT facilities/ Equipment

The respondents were asked to indicate the IT facilities that they were familiar with. The Table 4.16 showed their response.

**Table 4.16. IT facilities accessible to the respondents.**

<b>IT facilities</b>	<b>Frequency</b>	<b>Percentage%</b>
Computer	11	26.8
Printer	8	19.5
Email	5	12.2
Internets	15	36.7
Others(laptops, Tablets, iPads etc.)	2	4.8
<b>Total</b>	<b>41</b>	<b>100</b>

The Table 4.16 showed that the respondents indicated their accessibility to IT equipment. Those that had access to computer were 26.8%, internet 36.7%, printer 19.5% and email were 12.2%. The results received from the respondents indicated that all the respondents had access to at least one of the I.T items.

#### **4.5.2 Numbers of hours used in IT services at place of work on weekly basis**

The respondents were asked to indicate the numbers of hours they utilized in computers or IT related assets. The respondents gave their answers as showed in Table 4.17 in the choice of the following classes.

**Table 4.17 Hours spent on IT on weekly basis**

<b>Number of hours spent on IT (hours)</b>	<b>Frequency</b>	<b>%</b>
Less than 5	4	9.8
5-10	21	51.2
11-15	16	39.0
Above 15	-	-
<b>Total</b>	<b>41</b>	<b>100</b>

Table 4.17 showed that all respondent spent some time in Information Technology related work. Slightly half of the respondents (51.2%) spent 5-10 hour weekly on I.T 39.5% of the respondents spent 11-15 hours and only 9.8% of the respondents used less than four hours weekly on IT .This shows that there were some activities of IT done by respondents using IT facilities.

### 4.5.3 Activities carried out in a computer

The respondents were asked to indicate the activities that they carried out using computers. They were asked to rank them in order of most as 5 and least as 1 and also to leave blank activities where they did not know. They responded in Table 4.19 as follows

**Table 4.18 Activities carried out in a computer**

Activities	Ranking				
	5 f %	4 f%	3 f%	2 f%	1 f%
Email	3 29.3	23 56.1	10 24.4	3 7.3	1 2.4
Word processing	1 2.4	5 12.2	7 17.1	1 2.4	27 65.1
Internet	1 2.4	16 39.0	5 9.0	3 7.	1 2.4

Table 4.18 showed that the respondents used computers for E-mail services at 85.4% more frequently than any other computer services. Slightly less than half of the respondents (41.4%) used computers to get internet services. More than half of the respondents (65.1%) did not use computer for word processing. Other programs in the computers were not rated as there were no responses in services such as programming, power point & presentations. This indicated that not all common programs were utilized in the computers by the respondents and more advanced computer programs need to be taught to the staff.

### 4.5.4 Level of satisfaction in computing environment

The respondents were asked to indicate the level of their satisfaction in computing environment at their place of work. The following Table 4.20 showed their level of satisfaction.

**Table 4.19 Level of satisfaction in computing environment**

Level of satisfaction	Frequency	Percentage%
Very satisfied	0	0
Satisfied	29	70.7
Neither satisfied nor dissatisfied	10	24.4
Dissatisfied	2	4.9
Very dissatisfied	0	0
<b>Total</b>	<b>41</b>	<b>100%</b>

The Table 4.19 showed that majority (70.7%) of the respondents were satisfied with the computing environment in the health facilities, 24.4% of the respondents did not know whether they were satisfied or not. Only 4.9% of the respondents were dissatisfied with the computing environment.

#### 4.5.5 Level of satisfaction with quality and reliability of IT services provided

The respondents were asked to indicate their level of satisfaction regarding quality and reliability of IT in their place of work. This is showed in Table 4.20 below as follows.

**Table 4.20 Level of satisfaction in quality and reliability of IT services**

<b>Level of satisfaction</b>	<b>Frequency</b>	<b>Percentage%</b>
Very satisfied	1	2.4
Satisfied	28	68.3
Neither satisfied nor dissatisfied	12	29.3
Dissatisfied	-	-
Very dissatisfied	-	-
<b>Total</b>	<b>41</b>	<b>100%</b>

The Table 4.20 shows that majority of the respondents (70.7%) were satisfied with the IT services in term of quality and reliability. Only 29.3% of the respondents never indicated whether they were satisfied or dissatisfied with the IT services in term of quality and reliability. This showed that most of IT services were good and were reliable.

#### 4.5.6 Computer protection

The respondents were asked to indicate ways of protecting the work in their computers. The respondents gave the following answers in Table 4.21 as showed below.

**Table 4.21 Computer protection**

<b>Level of satisfaction</b>	<b>Frequency</b>	<b>Percentage%</b>
No protection	8	19.5
Use of Antivirus	2	4.9
Use of password	30	73.2
Encrypting the files	1	2.4
Others	-	-
<b>Total</b>	<b>41</b>	<b>100</b>



From Table 4.21 majority of the respondents (73.2%) claimed that their work was protected by use of password. A few respondents at 14.9% used Anti-virus to secure their work, while 19.5% of respondents reported that they did not protect their work in their computers, which exposes them to danger of being hacked by other computer users.

#### 4.5.7 People to consult in case of computer malfunction or computer crash

The respondents were asked to indicate the people they should consult in case the IT system fails in the place of work. The respondents indicated the following responses in the Table 4.22

**Table 4.22 People to consult in case of IT failure**

<b>Whom to consult</b>	<b>Frequency</b>	<b>Percentage%</b>
APHIA Plus	31	75.6
Trainer of trainers	4	8
Hospital management team	6	14.6
Others	-	-
<b>Total</b>	<b>41</b>	<b>100</b>

The Table 4.22 shows that majority of the respondents consulted the APHIA Plus personnel, while 14.6% consulted the hospital management team and a few others (8%) consulted other staff that have been trained on APHIA Plus best management practices especially in information Technology.

#### 4.5.8 Interdepartmental computer system connection

The respondents were asked to state whether their computer system was connected to other departments of the health facility. They responded by answering Yes or No. Results were indicated in Table 4.23 below as follows.

**Table 4.23 Interdepartmental computer system connection**

<b>Presence of automation</b>	<b>Frequency</b>	<b>Percentage%</b>
Yes	29	70.7
No	12	29.3

<b>Total</b>	<b>41</b>	<b>100</b>
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From Table 4.23, majority of the respondents (70.7%) indicated that the computer system was linked to other important areas in the health facility. Only 29.3% respondents reported that there was no connection of IT in their facilities. This denotes that staff can share information interdepartmentally.

#### **4.6 The influence of Monitoring and evaluation on implementation of ANC Services**

Monitoring and evaluation is an integral component of any project. The main aim of M&E in project management is to ensure that objectives are being achieved at every step/stage of a project. Corrective measures are also undertaken to ensure that project follow its intended path. Monitoring and Evaluation of ANC projects facilitated by APHIA Plus were analyzed as follows through the respondents (staff) working in health facilities.

##### **4.6.1 Monitoring and Evaluation of ANC services**

The respondents were asked to describe M&E of ANC services available in their health facility. They responded in Table 4.24 below as follows

**Table 4.24 Description of M&E in ANC service**

<b>Description of M &amp; E</b>	<b>Frequency</b>	<b>Percentage%</b>
No monitoring	-	-
Donor monitoring guidelines	11	14.3
Facility has monitoring procedures	16	22.9
There is monitory process &documentation	16	22.9
Monitory done by managers	28	39.9
<b>Total</b>	<b>41</b>	<b>100%</b>

Table 4.24 describes how monitoring and evaluation of ANC service were done in the health facility. It showed that there was some kind of monitoring. 14.3% of the respondents indicated that it was done to comply with the donor (APHIA Plus) monitoring guidelines. 22.9% of the respondents reported that the hospital management team had its own monitoring procedures that are usually documented. 39.9% of the respondents reported that information about monitored activities were used by the managers for decision making and feedback given to ANC service providers and beneficiaries in the community.

#### 4.6.2 Indicating whether health facility prepare progressive reports

The respondents were asked to indicate whether the health facility prepared progressive reports or not. Table 4.25 showed the response from the staff under interview.

**Table 4.25 Indicate whether health facility prepare progressive report**

<b>Whether progressive reports were prepared or not</b>	<b>Frequency</b>	<b>Percentage%</b>
Yes	38	92.7
No	3	7.3
<b>Total</b>	<b>41</b>	<b>100</b>

The Table 4.25 showed that majority of the respondents (92.7%) agreed that the health facility prepared progressive reports, only a few respondents (7.3%) were not aware.

#### 4.6.3 Potential users of M&E

The respondents were asked to mention the users of M&E information. The responses were illustrated in Table 4.26 as follows:-

**Table 4.176 Potential user of M&E**

<b>Potential users</b>	<b>Frequency</b>	<b>Percentage%</b>
APHIA Plus	16	39.0
Other donors	6	14.7
Hospital management	11	26.8
Beneficiaries	7	17.1
Government	1	2.4
Other specify	-	-
<b>Total</b>	<b>41</b>	<b>100</b>

The Table 4.26 showed that the main potential users of information of M&E were the APHIA Plus and hospital management team at 39% and 26.8% respectively. Other users of M&E include Beneficiaries at 17.1% and other donors at 14.7%. This showed that the M&E information was well utilized in all relevant area concerned with the health of people.

#### 4.6.4 Method of disseminating M&E information

The respondents were asked to indicate the method of disseminating M&E information data. Table 4.27 illustrates the methods of disseminating M&E information of ANC services.

**Table 4.27 Method of dissemination of M&E**

Method of dissemination	Frequency	Percentage(%)
Notice board	5	12.2
Report to the donor	32	79.0
Report to the beneficences	4	9.8
Other specify	-	-
<b>Total</b>	<b>41</b>	<b>100</b>

Table 4.27 showed that all health facilities had ways of disseminating M&E information. More than half of the respondents (79%) reported that M&E information were disseminated to the donors, 12.2% of the respondents reported that M&E information was disseminated through notice board in the health facilities and some at 9.8% said that information was disseminated directly to the beneficiaries.

#### 4.6.5 Rating M&E Reporting requirement by APHIA Plus

The respondents were asked to rate M&E reporting requirement by APHIA Plus. Their response is shown in Table 4.28

**Table 4. 188 Rating M&E Reporting requirement by APHIA Plus**

Rating by the respondents	Frequency	Percentage(%)
Not strict	-	-
Less strict	3	7.3
Strict	32	78.1
Very strict	6	14.6
<b>Total</b>	<b>41</b>	<b>100</b>

The Table 4.28 showed that APHIA Plus take M & E seriously as part of their management strategy. From the Table 4.28, majority of the respondents (78.1%) reported that APHIA Plus to be strict and 14.6% of the respondent confessed that APHIA Plus was very strict as far as M&E reporting was concerned.

#### 4.6.6 Challenges facing M&E in the health facilities

The respondents were asked to name challenges facing M&E in their place of work. The Table 4.29 reveals their response.

**Table 4.29 challenges facing M&E**

<b>Challengers</b>	<b>Frequency</b>	<b>Percentage%</b>
Lack of training	23	45.1
Lack of funding	12	29.3
Not perceived as a priority	4	9.8
Inadequate M&E strategies	2	4.9
Other specify	-	-
<b>Total</b>	<b>41</b>	<b>100</b>

Table 4.29 showed that the respondents had some challenges. Some of the challenges reported by the respondents include, lack of M&E training at 45.1%, lack of M&E funding at 29.3% .Others at 4.9% felt that there were inadequate M&E strategies put in place. Only 15.7% of the respondents reported that M&E was not considered as a priority.

## **CHAPTER FIVE**

### **SUMMARY OF THE FINDINGS, CONCLUSION AND RECOMMENDATIONS**

#### **5.1. Introduction.**

This chapter presents the summary of the findings of the study, discussion, conclusion and recommendations arrived at. The study assessed how APHIA Plus projects influenced the implementation of antenatal care services in Embu County, Kenya. The factors considered to have influenced the implementation of antenatal care services were assessed. These included the influence of capacity building and training by APHIA Plus on implementation of antenatal care services, the influence of adoption of Information Technology by APHIA Plus on implementation of antenatal care services and influence of Monitoring and Evaluation by APHIA Plus on implementation of antenatal care services.

#### **5.2. Summary of the findings**

In general this study revealed that there was an influence on implementation of antenatal care services by capacity building and training of staff working in health facilities where antenatal care services were rendered. From the findings, most of the staff in the health facilities were trained at least in one of the project management best practices. The commonest areas of training included leadership, implementation of services, Monitoring and Evaluation of programs and Information Technology, at a duration lasting not less than a week. Programs related to antenatal care services were also taught, which included immunization, antenatal profile and KEPI maintenance. A few staff were trained on Prevention of Mother to Child Transmission of HIV/AIDS (PMTCT) and Patient Initiative (PI) testing and counseling. All the respondents felt that they needed more training and indicated their areas of interest.

The study revealed that all the staff contacted during the study interview had knowledge on Information Technology especially in this era of computers and mobile phones. Although they had the computers and phones, majority of them did not spend substantial time in utilizing them especially in documentation and storing of data. Most of them were not aware of many programs except email services and use of internets. The staff reported that they were satisfied with the quality and reliability of the IT services. To some extent the computers are linked to improve efficiency of services with other departments. Majority of the respondents had knowledge that computers needed to be protected against viruses and also from hacking of information.

In general, there was kind of monitoring and evaluation service reported in health facilities where antenatal care services were implemented. The study revealed that M&E was carried out according to donor (APHIA Plus) guidelines and each health facility had its own monitoring and evaluation procedures that were documented according to government policy. Progressive reports were also written. The study also revealed that to some extent M&E information was useful to hospital management and the donor who, in this case is APHIA Plus. Common methods of dissemination of report included exposing them to the notice board, or giving reports to the donors. However, the study revealed that the donor who monitored and evaluated services in antenatal care service department was strict. The study also revealed that there were a few challenges facing M&E services at the health facilities which included lack of training on M&E, lack of funding and also the service being not taken seriously by the managers.

### **5.3. Discussion of the results**

The study revealed that there is an influence on implementation of ANC services played by capacity building and training of staff. From the findings, majority of the staff interviewed (82.9%) were trained in areas that directly had impact on Antenatal care services. The same findings reveal that those staff who trained in the related course benefited from such trainings to some extent. This concurs with Obisi (2011), who stated that in any training, staff acquires knowledge and skills that enable them to work well in their areas of service. The staff revealed that such training had influence on implementation of antenatal services to a greater extent. This shows that any form of training directly related to a service is very important if an organization desire to increase its productivity. According to Mullins (2002), better services attracts customers, thus working staff need to be updated and trained from time to time in order to improve their services.

According to Chege (2011), Staff needs continuous education and training to remain more informed about new updates pertaining their service. Therefore it is very unfortunate for this element of training to be ignored and those who were left out and did not attend any course during their service need to be encouraged to do so. From the findings, the respondents reported that they had access to computers and spend some time using them. This meant that their facilities were equipped with some computers. Some respondents revealed that they were able to use computers for writing and sending e-mails, others for browsing and internet services. Generally computers are very important gadgets for storing and use of data in the current world.

According to Kabiru (2007) information, communication and technology should not be directed to the services alone but also through people's ability to use such technologies and services effectively to allow their dialogue to be heard and to learn to participate in community life. This explanation did not feature very well from the findings, however, majority of the staff were satisfied with computing system in their facilities.

Monitoring and Evaluation services are offered to access the performance of projects, or programs set up by the government, international organizations and non- government organizations. The study findings revealed that there were some form of monitoring and evaluation services in the health facilities. The study findings also revealed that majority of interviewed staff (92.7%) reported that they prepared progressive reports that they handed over to their managers. The study also revealed that once monitoring and evaluation report were compiled, information was disseminated on the notice boards for feedback to the staff, while others were send to the donors and beneficiaries. This element of passing information about M&E to the managers, stakeholders and other beneficiaries is very important. WHO (2012) affirms that monitoring and evaluation of services is essential and can be used in future for project planning and development by the managers. According to Mulwa (2009), the success or failure of any service or project depend on consistence in M&E use because it is only in M&E that successes and failures and challenges in performance are realized and collective measure taken in order to complete a successive project.

#### **5.4. Conclusion of the findings.**

The study found out that the implementation of antenatal care services was influenced by different factors. The factors included capacity building and training of staff, adoption of information technology and monitoring and evaluation of antenatal care services. To improve such services, the above factors should be taken seriously. As a result, this will ensure better and prompt services, competence among the staff hence quality management systems in health facilities where objectives and goals are achieved.

#### **5.5. Recommendations of the study**

It is evident that capacity building and training of staff, adoption of information technology and monitoring and evaluation affect implementation of antenatal care services. To close on the gaps to further improve most of such services, the following are recommended:-



- i. Continuous training in relevant health sectors should be scheduled to ensure that every health professional is trained in relevant areas of services and according to the needs of that particular service. This will enhance knowledge and skills on the relevant jobs. Therefore the government should set aside some funds from the budget to enhance training of staff on value addition courses like such as leadership, communication, budget, M&E and IT to ensure effective service delivery according to the mission and vision of the institution.
- ii. Hospitals and other health facility to be supplied with enough computers which are of good quality to facilitate working, communication and storage of data. Those who are not computer literature must be trained on how to operate them, in order to embrace modern technology.
- iii. Monitoring and Evaluation is ongoing activity that must be implemented by all organizations and at all levels, therefore the government and county governments must ensure that funds are available for training staff on M&E and also for carrying out such services for effectiveness and efficiency of institutions or organizations.

#### **5.6. Suggestions for further study**

This study focused on only three factors that can have influence on the implementation of antenatal services. Further studies on this area should find out how government/NGOs policies regarding such services are implemented to improve Antenatal care services. Studies should also be carried out to find out other factors that affect ANC services in relation to its utilization by the clients. This could help save the lives of pregnant women and their unborn babies through optimal use of such services.

## REFERENCES

- Ahmed F. Das A (1992). Beneficial effects. *Three ANC visits might be the divergent point in lowering low birth weight babies*. Bangladesh integration, 33:50-53.
- AMREF (2011). *Organization Development and Systems Approach in staff capacity buildings*. AMREF, Nairobi.
- Annandalakshmy N, Talwan P. Buckshees K.(2003). *Demographic, socio-economic and medical factors affecting maternal mortality. An Indian experience. The Journal of family welfare*. (3): 1-4.
- Boit J. Wangare T and Magero J (2009) *Affirmative Action, A Kenya case. The perception of Affirmative Action in Eldoret municipality*. Grinverlag Germany.
- Blackstone, J.(2010). *Theory of Constraints Retrieved from [http://www.scholarpedia.org/article/Theory\\_of\\_constraints](http://www.scholarpedia.org/article/Theory_of_constraints)*. 26<sup>th</sup> march 2013
- Blokdyk G (2007) *Project management 100 success secrets*. Emereo Pty Ltd USA.
- Chege. J. Askwe I. Mosery N. Ndube, Nxumalo M. Kunene B. (2005). *Feasibility of introducing a comprehensive integrated package of ANC services in rural public clinics in South Africa. Frontiers Final Report* Washington DC. Population Council.
- Chem L. Evans T and Enard S (2004) *Human Resource for Health and overcoming health crisis. The Lanet* 364 (9449) PP 1984-1900.
- Cohen, L, Mainion, L and Morrison K (2011). *Research methods in Education* Routledge New York.
- Coria-soto I. Bobadilla J. Notzon F.(2006). The effectiveness of antenatal care in and, low birth weight due to preterm delivery. *International Journal for Quality in Health Care*: 8:13-20.
- Dinsemore P, Cabaria J: (2011). *The AMA Handbook of Project Management*. Library of Congress Cataloguing in Publication data USA.
- Down-zivin L(2009). Still too far to walk Determination of delivery of ANC Service. *BMC Pregnancy and Childbirth*. 9(2) 35 -37
- FAO (2007). *World Congress on Communication for Development, Lessons, Challenges and the way forward*. The World Bank Washington.
- Field A. P (2005). *Discovering Statistics using SSPS*, London sage.
- Gitonga G. (2011) *Determinant of utilization of ANC services in Eastern Province of Kenya*. MOH. Pages 30-31.

- Hayer M.(2008) .*Changes the characteristics of LP areas between 2004 and 2008*. online available : ad www suretan gov.uk
- Heaman M: Newburn C; Green C (2008). Inadequate prenatal care and its association with adverse pregnancy outcomes: a comparison of Indices: *BMC. Pregnancy &Childbirth*: 8-15.
- Hollander D. (2003). Prenatal benefits improve birth outcome among working Mexican women. *International family planning perspective*. 23(2):94-95.
- Kabiru E. W (2009). Utilization of ANC Services *Social Service and Medicine* Vol. 27 pp. 167 -172
- Karuru, R.N (2011). Determination of implementation of Antenatal care programs a case studied in South Imenti Meru. *East African Medical Journal* Vol (2) PP 270 – 273.
- Kathori C.R (2006) *Research Methodology, methods and techniques*: New age International (P). India.
- Kenya Demographic Health Survey, (2013)*Antenatal Services and prevalence*. Nairobi, MOH.
- Kumar R (2011). *Research Methodology. A step by step guide for beginners*.Sage publications Ltd, England.
- Lori B. (2014) *Leadership traits that inhibit innovations*Bigsky Associates. Hamitton.
- Magadi M. MadiseJ, Rodrignes N (2009) frequency and turning of ANC in Kenya exploring the variation between women of different communities, *Social Sciences andMedicine*.57(4) 557 -561
- Magadi M. Madise, N,(2000). Rodrig R frequency and turning of ANC in Kenya explaining the variations between women of different communities. *Social Science and Medicine*51(4): 551-561.
- Ministry of Health (2013).*Annual Report*. MOH. Embu
- Ministry of Health (2013). *Free antenatal care services. Promoting livelihood of women*. MOH, Nairobi
- Mugenda O.M and Mugenda ACG (2003). *Research methods. Quantitative and Qualitative Approaches*. Acts Press, Nairobi.
- Mullin L.(2002)*Organizational management*. Oakland limited . New york.
- Mulwa F (2008). *Participatory monitoring and Evaluation of community projects* Paulines LTd, Nairobi.

- Obisi, C. (2011). Employee Training and Development in Nigerian Organization. Some Observations and Agenda for Research, *Australian Journal of Business and Management Research*. Vol3 (i) PP 197-217.
- Rand, G.K.(2000) Critical chain. Theory of constraints applied to project management. International journal of project management Retrieved from <http://www.scribd.com/doc/65967999>.
- Rosato M, Laverack G; Grabman L; Tripathy P (2008). Community participation: Lessons for maternal newborn and child health. *The Lancet*, 372, Issue 9642, 13-19, PP. 962-971.
- Titaly C,R. Michael J,D and Robert C.I (2007) constraints to ANC utilization in Indonesia. *Report of Demographic Health Survey*, JKP, IKDHS.
- Say, L. and Raine, R. (2007) A systematic review of inadequate in the use of maternal health care in developing countries: examining the scale of the problem and the importance of context. *World Health Organization*, 85:812-819.
- Shah, I. and Say, L.(2007) Maternal mortality and maternal care from 1990-2005 uneven but important gains. *Reproductive Health matter*; 15:17-27.
- USAIDS (2012). *USAIDS report on the global Aids Pandemic*, USAIDS, Geneva.
- Winner, R. and Deninick, R (2011). *Mass media Research. An Introduction*. Gengage Learning. New York. USA.
- UNICEF (2003). Antenatal care in developing countries; Promises, achievements and missed opportunities. *An analysis of trends, levels and differentials, 1990-2001*. Geneva Switzerland.
- UNICEF (2011). *Child molarity in developing countries analysis of trends, levels and differentials 2008-2010* Geneva Switzzland.
- World Health Organization (2012). *The World Health report challenges facing maternal healthcare services. Responsibilities of healthy workers*. WHO .Geneva
- World Bank (2013). Does ANC make a difference to save delivery a study in Pradesh, India. *Healthy policy and planning*. 14.38-48
- WHO (2005). *The World Health Report. Make every mother and child count*. World Health Organization, Geneva.
- Zirab, J.(2007). Antenatal care provision and inequality rural North India. *Social Science and Medicine* 57/6/1147-1158.

## **APPENDIX I**

**UNIVERSITY OF NAIROBI,  
COLLEGE OF EDUCATION,  
AND EXTRA-MURAL STUDIES,  
P.O. BOX 30195,  
NAIROBI.**

**Dear Sir/Madam,**

**RE: LETTER OF INTRODUCTION TO HEALTH PERSONNEL STAFF  
RENDERING ANC SERVICES.**

I am a post graduate student undertaking a Master's degree course in Project Planning and Management, University of Nairobi. I am carrying out a study on influence of APHIA Plus projects on ANC services in maternal, and child health and family planning departments in a health facility within Embu County.

Please fill in the attached questionnaire which is designed to gather information on your personal data, APHIA Plus practices which include capacity building, adoption of Information Technology and Monitoring and Evaluation in your place of work. Please get assured that the information sought will only be used for research work. This information will be treated with confidentiality and therefore do not write your name or the name of your institution in the questionnaire.

Kindly provide information to all the items in the questionnaire. Any other assistance from you in promoting this study will be highly appreciated.

Thank you in advance.

Yours Faithfully,

**Evelyn Kanyiva Njeru**

**APPENDIX II**

**QUESTIONNAIRE FOR STAFF IN HEALTH FACILITIES WHERE APHIA PLUS PROJECTS ARE IMPLEMENTED.**

Please respond to each question by putting a tick or writing in the space provided. DO NOT indicate your name anywhere in this questionnaire. All responses you shall give will be handled with utmost confidentiality.

**SECTION A.**

1. Indicate your age as in the following age groups (in years)

18-30                       41-50

31-40                       Above 50

2. Please indicate your gender.

Male                       Female

3. Please select one option that closely relate to your role in the health facility/APHIA Plus

Head of Health facility

Head of MCH/FP clinic

Doctor in service

Nurse in service

Clinical officer

Community Health worker

Other specify \_\_\_\_\_

4. Indicate type of health facility assisted by APHIA Plus

Dispensary

Health centre

Sub County Hospital

County Hospital

Others specify .....

5. Indicate your working experience in the health facility

- 1-5 years
- 6-10 years
- 11-15 years
- 16-20 years
- Over 20 years

6. Please indicate how long has the health facility been assisted by APHIA Plus

- 1-3 years
- 4-6 years
- 7-10 years
- Over 10 years

7. Please indicate the location of your health facility

- Embu West
- Embu North
- Embu East
- Mbeere North
- Mbeere South

8. Indicate whether you are satisfied with APHIA PLUS assisted programs in your health facility.

- Very satisfied
- Somewhat satisfied
- Neither satisfied nor dissatisfied
- Somewhat dissatisfied
- Somewhat satisfied

**SECTION B: CAPACITY BUILDING**

9. Please state the level of your education

Primary	<input type="checkbox"/>	Tertiary (college)	<input type="checkbox"/>
Secondary	<input type="checkbox"/>	University	<input type="checkbox"/>

10. Have you been trained on project management best practices in health

Yes  No

11. If Yes, indicate the areas you were trained in

Leadership of projects	<input type="checkbox"/>
Implementation of projects	<input type="checkbox"/>
Monitoring and evaluation	<input type="checkbox"/>
Information technology	<input type="checkbox"/>
Equipment maintenance	<input type="checkbox"/>
Budgeting	<input type="checkbox"/>
Risk management	<input type="checkbox"/>
Others specify _____	<input type="checkbox"/>

12. If Yes indicate the length of the training

Less than a week	<input type="checkbox"/>
1-2 weeks	<input type="checkbox"/>
3-4 weeks	<input type="checkbox"/>
More than 4 weeks	<input type="checkbox"/>

13. Indicate other health related Program you have attended facilitated by APHIA Plus

Immunization	<input type="checkbox"/>
ANC services	<input type="checkbox"/>
Neonatal services	<input type="checkbox"/>
KEPI maintenance	<input type="checkbox"/>
Others specify.....	

14. Indicate whether such training programs influence ANC services in health facilities.

Yes  No

15. Indicate the areas you would like to be trained on

.....  
.....



**SECTION C. INFORMATION TECHNOLOGY**

16. Indicate whether you have access to the following IT facilities.

Computer       Internet   
 Printer       Email services

On weekly basis, approximate the number of hours you use in a computer at work place.

Less than a one hour   
 1-5 hours   
 6-10 hours   
 11-20 hours   
 21-40 hours   
 More than 40 hours

17. Indicate activities you carry out in to your facility computer (rank in order most as 5, least activities as 1) Leave blank activities you don't do

	5	4	3	2	1
Email					
Browsing the internet (social media)					
Document preparation (word processing, spreadsheets).					
Programming					
System/network administration					
Presentation graphics, Power point					
Others (specify)					

**To what extent are you satisfied with the following statements?**

18. Overall, I am satisfied with the computing environment in my health facility.

Very satisfied   
 Somewhat satisfied   
 Neither satisfied nor dissatisfied   
 Somewhat dissatisfied   
 Very dissatisfied

19. Overall, I am satisfied with the variety of services provided by the information technology in my organization.

- Very satisfied
- Somewhat satisfied
- Neither satisfied nor dissatisfied
- Somewhat dissatisfied
- Very dissatisfied

20. Overall, I am satisfied with the quality and reliability of services provided by the Information Technology in my area of work.

- Very satisfied
- Somewhat satisfied
- Neither satisfied nor dissatisfied
- Somewhat dissatisfied
- Very dissatisfied

21. Indicate whether the work in your computer is protected or not.

- No Protection
- Use of Anti-virus at logon
- Use of password at logon
- Encrypting the files
- Others specify

22. Indicate whom you contact in case of technology failure

- Aphia Plus Personnels
- Trainer of trainees
- Hospital management team
- Others specify

23. Indicate whether there is interdepartmental computer connection in the health facility

- Yes  No

**SECTION C. MONITORING AND EVALUATION.**

24. Please describe monitoring of ANC services in your health facility

- No monitoring undertaken
- Responds to donor monitoring guidelines only
- The facility has monitoring procedures
- Monitoring processes are undertaken and documented
- Information about monitored activities are used by managers
- for decision making and feedback given toANC services
- provider and woman in the community.

25. Indicate whether health facility prepare progressive reports

- Yes  No

26. Indicate potential uses of M&E reports from your health facility.

- Aphia Plus
- Other Donors
- Hospital Management
- Beneficiaries
- Staff
- Government
- Others specify \_\_\_\_\_

27. Indicate ways of disseminating M&E findings on.

- The notice board
- Report to the donor
- Report to the beneficiaries
- Others specify \_\_\_\_\_

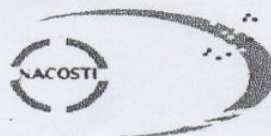
28. How can you note M&E reporting requirements from APHIA Plus?

- Not strict
- Less strict
- Strict
- Very strict

29. In your opinion, what indicate the challenges facing M&E in your health facility

- Lack of adequate training on M&E
- Lack of funding for M&E
- Not viewed as a priority by organization
- Inadequate M&E strategies

## APPENDIX III



### NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

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P.O. Box 30623-00100  
NAIROBI-KENYA

Ref: No.

Date:

**26<sup>th</sup> October, 2016**

**NCST/5/002/R/695/62**

**EVELYN KANYIVA NJERU  
P.O BOX 923  
EMBU**

#### **RE: RESEARCH AUTHORIZATION**

Reference is made to your letter dated **4<sup>th</sup> October, 2016** on the above subject.

I am pleased to inform you that you have been authorized to carry out research on the topic you have selected in various hospitals within your country for a period ending **30<sup>th</sup> April 2017**.

Kindly report to the **County Director of Health Services and & hospital CEOs** for entry to the specific area your interest.

A handwritten signature in black ink, appearing to read 'Stephen K. Kibiru', is written over a faint circular stamp.

**DR. STEPHEN K. KIBIRU, PhD. \***  
**FOR: DIRECTOR-GENERAL/CEO**

Copy to:

County Director of Health Services.  
CEO County Health Facilities