

**CHILDHOOD PRIMARY HEALTH CARE PRACTICES IN  
SELECTED CHARITABLE CHILDREN'S INSTITUTIONS  
WITHIN NAIROBI COUNTY**

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**DECLARATION**

This research dissertation is my original work and has not been presented for the award of a degree in any other university.

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## **ABBREVIATIONS**

BCG	Bacille Calmette Guerin
CBO	Community Based Organization
CCI	Charitable Children's institution
CSO	Civil Society Organization
DCS	Department of Children Services
FBO	Faith Based Organization
HIV	Human Immunodeficiency Virus
ICCP	Individual Child Care Plan
MUAC	Mid Upper Arm Circumference
NCCS	National Council of Children Services
NGO	Non-Governmental Organization
OVCs	Orphans and vulnerable children
PHC	Primary Health Care
UNCRC	United Nations Convention on Rights of the Child
UNICEF	United Nations Children's Education Fund
VAD	Vitamin A Deficiency
WHO	World Health Organization

## **DEFINITION OF TERMS**

**Charitable Children's Institution (CCI):** A home or an institution which has been established by a person, corporate or a religious organization and has been granted approval by the NCCS to manage a programme for the care, protection and rehabilitation of children (1)

**Primary health care (PHC):** Essential healthcare based on practical, scientifically sound and socially acceptable methods and technology made universally accessible to individuals and families in the community through their full participation and at a cost that the community and the country can afford (2)

**Single Orphan:** A child below 18 years old who has lost a parent through death (either mother or father) (1)

**Double orphan:** A child below 18 years whose biological mother and father have died (1)

**Orphan and vulnerable children:** These are children under the age of 18 years whose parents have died and in need of protection (1)

**Abandoned child:** A child not with parent, guardian and not in a safe place

**Foster care:** Placement of a child with a family other than the child's own family. The family would have been selected, qualified, approved and supervised by a competent authority for the purpose of providing alternative care (1)

**Individual Child Care Plan:** A written document which outlines how, when and who will meet a child's development needs in the CCI (1)

**Major congenital anomalies:** A birth defect that is present at birth with medical, surgical and cosmetic importance such as neural tube defects, abdominal wall defects such as gastroschisis and congenital heart defects (3)



## ABSTRACT

**Background:** Kenya is currently home to over 2.6 million orphans and vulnerable children, majority of whom (40%), are as a result of Human Immunodeficiency virus/Acquired immunodeficiency syndrome (HIV/AIDS). More often these children end up in either foster care homes or charitable children institutions (CCIs) in a bid to provide them with collective primary healthcare. Recent studies have established that children in need of protection are particularly more vulnerable to diseases and malnutrition. Appropriate adoption of the eight primary healthcare (PHC) elements has been proven to be successful in delivery and provision of the appropriate care needed by these children. However, extent of delivery of these PHC elements among children of different age groups within CCIs has not been established making provision of age specific interventions a challenge.

### **Objectives:**

**Primary objective:** To determine the proportion of children receiving the complete package of the essential five primary healthcare elements within CCIs in Nairobi County.

### **Secondary objectives:**

To determine the proportions of children aged 6-24 months receiving individual elements within the essential package (, immunization, vitamin A supplementation, de-worming and HIV testing status) in selected CCIs within Nairobi County.

**Methods:** A descriptive cross sectional approach has been preferred in this study. Data was collected from individual child's files and anthropometric measurements of children was recorded. A structured questionnaire was separately administered to the CCI managers.

**Results:** 12 CCIs were recruited in to the study. Majority of the children, 250 (64.4%), were aged 13 to 24 months and were male 199 (51.3%).The overall number of children who received the complete package of care (defined as up to date immunization status & known HIV status & Vitamin A supplemented in the last 6 months & deworming medicine given in the last 6 months & green MUAC category) was 85 (21.9%).

**Conclusion:** There's inadequate implementation of the primary healthcare elements to children in CCIs within Nairobi County.

**Keywords:** PHC, CCIs, Orphans and Vulnerable, PHC Elements, Diseases and Malnutrition

## **CHAPTER ONE**

### **1.0: INTRODUCTION**

#### **1.1 Background**

Orphaned and vulnerable children are children under the age of 18 years whose parents have died or indisposed and therefore in need of protection. The conditions under which these children stay, sometimes fending for themselves, makes those vulnerable to abuse and general neglect. For a long time now, this matter has been of concern for different social agents such as charities taking care of orphans and children in poverty, to the institutions caring for vulnerable children during periods of war and disasters. Recently, with the development of International Convention on the Rights of the Child 1989, public policies in this regard have continued to change in response to political and social situations studies are on-going on the effect of institutional care on children.

Globally, with general reduction in life expectancy largely as a result of wars and pandemics such as HIV, many children have increasingly become orphaned or have been left to stay without parental care(3) This has translated into an increasing need for alternative care for these children, with different modalities applied in different contexts. There are an estimated total number of 153 million vulnerable and orphaned children globally, with a majority of these being in the developing countries (4). In Kenya, there were 2.6 million orphans and vulnerable children according to Kenya AIDS indicator survey 2012, a majority (46%) due to of HIV and AIDS (5) (6).

With the fragmented social fabric, compounded with the increasing cost of living, institutions have come in handy to take care of these children, mostly until such an age when they are able to fend for themselves. This has been done through Civil Society Organizations (CSOs) working with development partners to meet the needs of vulnerable children mostly in institutions (7).

#### **1.2 Children in need of special protection (CNSP)**

This refers to children who live in conditions that pose serious risks to their lives (1). These conditions retard their physical, mental and psycho-emotional growth. Children in need of special protection include orphans, those picked from disaster areas, street children, abandoned children of imprisoned parents, destitute and neglected children (8).

Generally, children under five years of age are vulnerable to diseases; children in need of special protection are particularly vulnerable due to lack of parental care and special attention (3)(9). They are also more prone to diseases and malnutrition with a high morbidity burden (10) from acute illnesses like diarrhea, vomiting and cough to chronic diseases like Tuberculosis, HIV and mental illnesses like depression (9)(11).

### **1.3 Role of Charitable Children Institutions**

In the children act of Kenya 2012 Section 58, Charitable Children Institution (CCIs) is defined as an institution or a home established by a person, corporate or a faith based organizations and has been given approval by the National Council for Children services (NCCS) to manage a program for the protection, care and rehabilitation of orphans and vulnerable children (12).

These institutions are mostly run by the Government or privately as rescue and rehabilitation centers. CCIs are defined as organized bodies which take care of children who for one reason or another have been separated from their parents and families (13)(14)

In Kenya, Civil Society Organizations (CSOs), comprising Faith Based Organizations (FBOs), Community Based Organizations (CBOs), Community Units (CUs) and Non - Governmental Organizations (NGOs), are some of the grass root institutions that take up the responsibility of delivering quality care to vulnerable children in the community (9) CCIs are temporary placement agencies for children in need of care, with a recommended period of stay not lasting more than 3 years (1) . As at September 2015, Nairobi County had 505 CCIs registered with the department of children services. The CCIs are spread throughout the 17 Sub counties (15).

For a long time, these CSOs working in partnership with development partners to meet the needs of vulnerable children simply supplied the items they thought the children needed with a focus on high coverage and outputs. Governments, in an attempt standardize this, developed different strategies aimed at streamlining the operations at these CCIs. The government of Kenya for instance, together with development partners developed the Minimum Service Standards for Quality Improvement of Vulnerable Children Programs to

support and streamline the quality of vulnerable children care (6), with emphasis on provision of holistic care including primary health care (1)

#### **1.4 Primary health care (PHC) for children in CCIs**

Primary health care, defined as essential health care that is scientifically sound and socially accepted methods and technology that is made universally accessible to the community and families at an affordable cost through everybody's participation in an attempt at achieving health for all (2).

WHO proposes that primary health care service provision to all children is a basic human right;; this is irrespective of the social status. These services include: education concerning prevailing health problems and methods of preventing and controlling them; promotion of food supply and proper nutrition; an adequate supply of safe water and basic sanitation; maternal and child health; immunization against major infectious diseases; prevention and control of major endemic diseases; appropriate treatment of common diseases and provision of essential drugs (2).

In line with this, all governments are tasked to formulate national policies, strategies and plans of action to launch and sustain PHC as part of comprehensive national health system. In Kenya, all children under five years are provided with free medical care, including mental health, dental health and management of HIV/AIDS. CCIs are therefore responsible for ensuring that the children under their care receive appropriate medical management, including immunization and growth monitoring. Appropriate staffing levels including the availability of referral system should also be provided at every CCI. All children in CCIs should ideally receive periodic health reviews (16).

## **CHAPTER TWO**

### **2.0 LITERATURE REVIEW**

#### **2.1 Introduction**

As of 2010 there were 153 million orphaned children and adolescents living in the world according to UNICEF (17). 36% of the world OVCs live in sub-Saharan Africa. It has also been estimated that 13% of the world's children under the age of 18 years live in Sub-Saharan Africa. Approximately 27% of these are orphaned due to HIV AIDS (4) (16). Families in Sub-Saharan Africa have been faced with difficulties in taking care of these children.

Majority of all orphans not living with a surviving parent are taken care of by extended families (16). As of 2004, 17% of households with children in sub-Saharan Africa were taking care of an average of 1.8 orphans (16). With increasing poverty and more than 46% of Kenyans living below the poverty line, with the high numbers of children needing care and support, many families have difficulties in meeting the traditional care-taking practices and responsibilities.

#### **2.2 standards for best practice in CCIs in Kenya**

Children are indeed the backbone of the society that wishes to thrive in to the future. Therefore, they should be well taken care of in a conducive and loving environment that has optimal conditions for survival. This best environment is at home with parents and family. However, not all children get the chance to live with parents and family and these are the children that end up staying in CCIs as a temporary arrangement especially after rescue missions.

UNICEF has been mandated by the United Nations general assembly with the responsibility to advocate for and protect the rights of children and to provide for them their essential so as to help them reach their full potential within the United Nations member states (7) (8).

Kenya being a member state of the United Nations is bound by the same rules.

Kenya has therefore adopted its ways of protecting and advocating for the basic rights of children together with UNICEF Kenya and is guided by the convention for children's rights. It does this by also creating provisions for children without families. It not only protects the

children's basic rights to health and proper nutrition but by also guides how children's institutions should be run and managed to (and) conform to laid down protocols by working competent authorities especially in areas of health , safety and nutrition (12) (18).

The children's Act deals with the rights of children and the responsibilities of care providers in making sure that the rights are protected. It also outlines the requirements for the establishment of children's institutions (12). Individual agencies and organizations dealing with children are expected to have policies that follow what is stipulated in the Act. It has however been noted that there is lack of policy frameworks that comprehensively address children's rights and lack of co-ordination between government and the various actors involved in CCIs management. In addition monitoring and evaluation of the activities within CCIs has so far been difficult (3).

In order to standardize and regulate service provision within the CCIs in Kenya, the Government gazetted the Children's Regulations of 2005 with the aim of achieving improved care and protection of the children. The standards clearly outline the requirements for setting up a CCI, the management guidelines, staffing practices and procedures and children's programme (1).

### **2.3 Children's health status in CCIs**

Maintaining orphanages is much more expensive than providing direct assistance to families and communities to care for the children (1) (19). Cost comparisons from Uganda show operating costs for orphanages to be 14 times higher than those for community care (20). Some homes are more commercially oriented and the management uses donations for personal use (20) and therefore, the need to investigate the management and care practices of the institutions.

As a result, studies and reports on the state of health of institutionalized children have time and again been alarming with most children's health, growth and development and even their lives being at risk. This is due to lack of resources, overpopulation, and lack of trained personnel and poor management of the available resources (3).

Throughout the world, an unknown number of children, most likely in the millions, in orphanages and other non-penal institutions, are kept in grossly substandard facilities (21). They are provided with inhumane care; many being left to die (21). The personnel of the children's institutions responsible for nurturing and providing for the children often physically and sexually abuse children in their care, and subject them to other cruel and degrading treatment (21). Even in institutions that are clean and provided adequate food, staff often neglect children, leaving them to lie alone in cribs with no stimulation, play and adult attention (21).

In Romania children suffer from inadequate food, housing, clothing, and medical care, lack of stimulation or education, and neglect. Disabled children suffered even grimmer conditions and treatment, with many being malnourished and ill (21). In 1995, 60% of children living in orphanages in Romania were found to be suffering from Iron deficiency anemia (21). The grim conditions faced by children in other countries where studies on children under institutional care have been undertaken, re-enforce the need to investigate childcare practices of Children in Need of Special Protection (CNSP) in Kenyan institutions.

In China, institutionalized children suffer from starvation, disease, and unnatural death. There is a pattern of cruelty, abuse, and neglect that results in very high mortality rates in state institutions (21). Children in the Chinese orphanages are attended to by non-university trained doctors and it is uncommon for a university physician to care for a child from an orphanage (22). In Uganda, a study on orphans summarized the situation in children's homes as generally not adequate at meeting children's developmental needs (20). In Kenya it has been observed that problems that children experience include; pollution, overworking, overcrowding, unbalanced meals, shortage of trained personnel, lack of recreational facilities and lack of proper medical care (23). There is thus a need for government regulations and policies concerning the running of the homes.

## **2.4 Scope of service delivery to children in CCIs**

All children under 5 years are entitled to free medical care by the Government of Kenya. This also includes HIV care and management and TB treatment for children. CCIs are therefore mandated to ensuring that:

- All children get access to medical care including chronic and terminal illnesses.
- All children under 5 years get the mandatory vaccinations and growth monitoring as required by the health ministry.
- All the children sleep under insecticide treated mosquito nets.
- Access to a nurse - either at the facility or available on call.
- A pediatrician is available at all times at close proximity or on call.
- Clear rules are in place on the safekeeping and access to medicines.
- In the event a CCI admits children with disabilities, there is the provision of the required appliances/assistive devices and services for the care of these special group of children.
- There is training opportunities for parents and caregivers of children with disabilities and other child with special health need, for example terminal illness and chronic diseases.
- Referral arrangements and guidelines are clear to medical institutions/hospitals as need be.
- Legal custodians and next kin are identified whenever possible and are indicated on each child's file. These legal custodians when available, should be made aware that they could be required to consent for any major operation and hospital admission.
- Some staff members are given the authority to make decisions in case of emergency medical operations in the absence of a legal custodian or next of kin.

### **2.4.1 Nutritional status**

Appropriate nutrition is a mandatory for the development of countries and for the wellbeing of its people. The 2010 Kenyan constitution recognizes food adequacy and nutrition as a human right. It states that all persons have the right to be free from hunger and has the right to adequate food of good quality including children (24) (Article 53). Furthermore, the Government of Kenya's Food and Nutrition Security 2011 Policy clearly states that good nutrition is fundamental to human development in Kenya and the world (25). Adequate and good quality nutrition is paramount to children's growth and development (26).



The duration from birth to 2 years of age is especially very important for optimal physical, mental and cognitive growth and development. This period is unfortunately often marked with deficiencies in nutrition. This often interferes with optimal growth and good health. The children are therefore predisposed to common childhood illnesses such as diarrhea and pneumonias (26).

In Kenya Demographics Health Survey (KDHS) 2014 26% of children under 5 years are stunted, 4% are of them were wasted and 11% had underweight (26).

The height-for-age index is an indicator of linear growth and shows long term growth deficits. Children who have height-for-age Z-score less than minus two standard deviations (-2 SD) from the median of the WHO reference population are regarded as short for their age (stunted) and are therefore chronically malnourished. Children whose height for age is less than minus three standard deviations (-3 SD) are severely stunted. Stunting is an indicator of failure to receive adequate nutrition over a long duration (26).

The weight-for-height index measures the relationship between body and body height or and describes current nutritional status. Children with W/H Z-scores less than minus two standard deviations (-2 SD) are thin/wasted and have acute malnutrition. It may be due to inadequate food intake or a recent episode of illness causing loss of weight and the onset of malnutrition. Children with weight-for-height index less than minus three standard deviations (-3 SD) are severely wasted. (26).

Weight-for-age is a composite index of height-for-age and weight-for-height. It considers both chronic and acute malnutrition. Children with weight-for-age less than minus two standard deviations (-2 SD) are considered as underweight. Children whose weight-for-age is less than minus three standard deviations (-3 SD) are regarded as severely underweight (26).

Several studies in Kenya, have demonstrated widespread stunting among children in CCIs. One study in Uasin Gishu County showed 59% of children in CCIs were stunted, 10-15% were severely underweight and 5% had moderate to severe wasting (16).

To standardize the operations in CCIs for the effective running and management, the government of Kenya and UNICEF Kenya came up with national standards for best practice in CCIs that also covers nutrition and food security in CCIs among other aspects of child development. These standards are well in line with and have been adopted from the Child's Rights Act 2011 and the recently promulgated new Kenyan constitution of 2010. It has the following rights pertaining to child's nutrition clearly outlined (1) (27).

#### **2.4.2 Right to nutritious and adequate food intake**

All CCIs must:

- Make sure the availability and accessibility of good nutrition for all children even those who need special diets
- Make sure that the food provided for the children is of balanced diet.
- Make sure that a menu is developed and that the menu is followed for the daily dietary requirement of the children
- The food menu is reviewed periodically to ensure that there is variety in the food
- Provide safe and proper storage of food as well as disposal of expired and unfit foods
- Not accept food gifts and donations unfit for human consumption

#### **2.4.3 Immunization status**

The Division of Vaccines and Immunization (D.V.I) supported by the Division of family health under the Health ministry as part of child's health and survival programme is responsible for the immunization of all children (26). Universal immunization of children against common vaccine-preventable diseases, such as Tuberculosis, Whooping cough, Diphtheria, Tetanus, Rota virus, measles and polio is crucial to reducing infant and child mortality. Other vaccines that are given to children in Kenya protect against Haemophilus influenzae type b (Hib) and hepatitis B (26).

According to the guidelines by the World Health Organization, basic vaccinations are considered covered when a child has received a vaccination against tuberculosis (BCG), three doses each of the DPT-HepB-Hib (penta-valent), polio vaccines and vaccination against Rota virus and measles. The BCG vaccine is given at birth or at first contact with the healthcare

systems, while the DPT-HepBHib and polio vaccines are given at ages 6, 10, and 14 weeks. Measles vaccine is given at or soon after age 9 months.

The Kenyan immunization programme considers a child to be fully vaccinated if the child has received WHO basic vaccinations plus 3 doses of the pneumococcal vaccine given at ages 6, 10, and 14 weeks (26).

As of KDHS 2014 79% of children aged 12-23 months have received all basic vaccines. Nairobi County had 81% coverage while Central Kenya had the highest coverage at 91% and North Eastern province had the lowest coverage at 55% as KDHS 2014 (26). Few studies if any have been done on immunization practices in children in CCIs in Kenya.

#### **2.4.4 Vitamin A supplementation**

The term vitamin A designates a group of retinoid compounds with the biologic activity of all-trans-retinol (28). Vitamin A plays an essential role in a large number of physiological functions that encompass vision, growth, reproduction, haematopoiesis, and immunity. Despite major advances in the knowledge of vitamin A biology, its deficiency is still a serious public health problem that affects an estimated 127 million preschool children. Vitamin A deficiency results in increased risks of mortality and morbidity from measles and diarrheal infections, blindness, and anemia. Many of these effects can be linked to the immunological functions of vitamin A (28).

As of 2004, 50-60 per cent of all school-going children lacked vitamin A in Kenya (8). Periodic dose supplementation (usually every six months) with vitamin A is one method of making sure that those at risk do not develop Vitamin A deficiency (26).

## CHAPTER THREE

### 3.0 PROBLEM STATEMENT, JUSTIFICATION AND RESEARCH QUESTION

#### 3.1 Problem statement and justification

It is estimated that there are 2.6 million OVCs in Kenya today (5), most of whom stay in children's homes. The care given to these children should meet the international standard of care that is required, especially the provision of primary health care indices that will be assessed in this study. On the contrary, unpublished reports in Kenya through supportive supervision done by the department of Children Services (DCS) have found widespread malpractice over the years surmounting to inadequate care and protection of children (1).

The findings indicate that a majority of these children are malnourished as a result of the irregular supply of foodstuffs mostly from well-wishers and other charitable organizations (7). These children also suffer from acute and chronic illnesses such as TB and HIV (7). In addition, the care giver: child ratio is often high (1) leading to sub optimal service provision in most of these institutions (4). These findings have to a great extent been as a result of little attention being paid to improving the quality of services at these institutions.

The government of Kenya has in place guidelines for the care and management of children in these institutions. No studies have been conducted on health indices of children in CCIs and this study seeks to address that gap by determining the health indices of these children. It also seeks to determine if the health care services provided at the CCIs meet the children's special and often unique needs. The health status of children will be determined by taking their anthropometric measurements and determining their immunization, deworming, vitamin A supplementation and HIV status.

Since 46% of orphans and vulnerable are as a result of HIV/AIDS we seek to determine if basic HIV testing is offered to these children. This because it is only after testing that appropriate treatment and screening for opportunistic infections can be offered. We therefore want to determine what percent of the children have their HIV status known in the CCIs. No such study has been done so far.

### **3.2 Research questions**

What proportions of children within selected CCIs in Nairobi County received the 5 essential childhood PHC elements?

### **3.3 STUDY OBJECTIVES**

#### **Primary objective**

To determine the proportion of children within selected CCIs in Nairobi that receive the 5 essential PHC elements.

#### **Secondary objectives**

To determine the proportion of children within CCIs that receive individual PHC elements (growth monitoring, up to date immunization, deworming, vitamin A supplementation, HIV test).

## CHAPTER FOUR

### 4.0: RESEARCH METHODOLOGY

#### 4.1 Study Design

This was a descriptive cross sectional study. Observations were made at one point in time. This design is the most suited for looking at the implementation of the various primary healthcare elements within the CCIs in Nairobi County. Based on the fact that probability sampling was used in selecting the CCIs, the findings from this study is representative of PHC services provided in CCIs in Nairobi County.

#### 4.2 Study site

The study was conducted in selected CCIs within Nairobi County.

- Nairobi County is also the capital city of Kenya and is sub divided into 17 Sub Counties with 9 administrative child service offices
- According to the National Directory for CCIs in Kenya there are a total of 505 CCIs housing about 9000 orphans and vulnerable children in Nairobi(15)
- The CCIs are either government sponsored or privately sponsored and are homogenously distributed across the 17 Sub Counties (Figure 9).

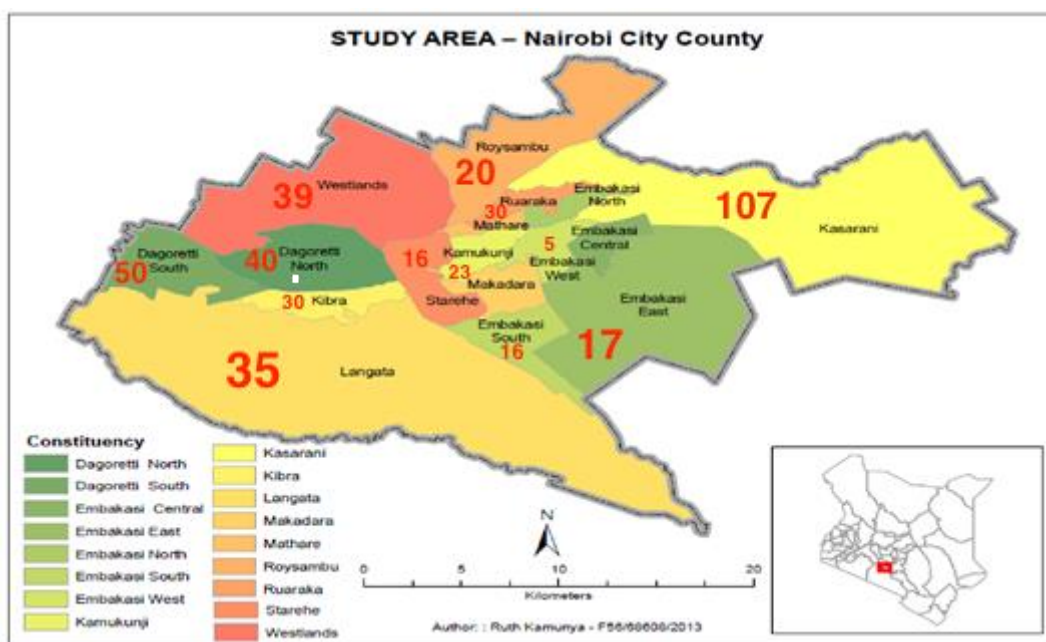


Figure 1: Study area and distribution of CCIs in Nairobi County

### **4.3 Study population**

These study comprises two study populations

1. Selected CCIs within Nairobi County: The CCI managers were interviewed through direct questionnaires on information about CCI and aspects on the delivery of the primary healthcare elements in order to correlate the findings from the children's health indices with the CCI.
2. Children within the selected CCIs: Children between the ages of 6-24 months living in selected CCIs within Nairobi County

The study is not assessing the performance of the CCIs in regards to adherence to national guidelines. (A CCI manager is the person recognized by the sub county children department as the in-charge or the person mandated with day to day activities of the CCI).

### **4.4. Inclusion criteria**

1. CCIs:

CCIs whose CCI managers have consented for the study

2. Children within CCIs:

- Age – 6-24 months
- Must have stayed in the CCI for more than 6 months

### **4.5 Exclusion criteria**

1. Children:

Children who were too sick to be assessed.

### **4.6 Sampling method**

Through a pilot survey conducted at the sub county children's department registry, it was established that on an average 20 CCIs will be recruited from the 4 sub counties to meet the calculated sample size. All the two government sponsored CCIs that take care of children below two years were included in to the study. For the 18 private CCIs, multistage sampling technique was used to recruit.

Note: Because this survey was done at the sub county children's office, the serious non response limitation described at the recruitment level of this book could have been foreseen.

### **Stage 1**

Four sub counties were randomly selected using tables of random numbers from the 9 administrative sub county units in Nairobi County.

At this stage the 2 government CCIs were recruited in to the study.

### **Stage 2**

Permission obtained from the national commission for science technology and innovation (NACOTSI), from the county children officer, the county health and education departments for the private CCIs and the National Council of Children Services (NCCS) for the government CCIs was presented to the 4 sub county children officers. The following information was obtained.

- List of all the CCIs in the sub county with children below 2 years of age
- Number of children in each CCI and how many are aged between 6-24 months

### **Stage3**

We randomly select 18 CCIs from the 4 sub Counties ( Kamukunji, Embakasi, westlands and Langata). The sub counties were selected though a random sampling process.

14 out of the 18 CCIs declined to take part in the study. We therefore decided to increase the number of sub counties to 6(two new sub counties; kasarani and Kibera were added through a simple randomization process).At this point we settled for convenient sampling where CCIs were recruited through a convenient sampling across the 6 sub counties. Once a home declined we just went to the subsequent home until the required sample size was achieved.

At the end of the study 32 homes have declined to take part in the study and 12 homes have consented.



#### Stage 4

Once in the CCI, we administered structured questionnaire (Annex 4) to the CCI managers and data extraction from the children's files was done for 2<sup>nd</sup> part of the questionnaire. Information on immunization, deworming, Vitamin A supplementation and HIV testing was obtained from the files.

Anthropometric measurement (weight, height and MUAC) was then taken

Length was measured using a commercially procured an inelastic tape measure with the child lying on level ground against a flat surface and was recorded in centimeters to one decimal point. Weight was measured using an electronic scale (CISONE model C5 8316, commercially procured) and was recorded in kilograms to one decimal place. Summary indicators for the nutritional assessment of the children were generated using growth standards published by the WHO in 2006. Nutritional outcomes included height-for-age score, weight-for-age score, stunting and underweight

#### 4.7 Sample size calculation

It is estimated that 9000 children living in 505 CCIs in Nairobi County. Using Fischer's formula as in the table below, a total of 385 children was to be selected but we sample 395 children out of whom 388 were recruited in the study.

#### 4.8 Sample size for the number of children to be included in the study

$$N = \frac{z_{1-\alpha/2}^2 p(1-p)}{d^2} \text{ (Fisher's et al., 1998)}$$

$z_{1-\alpha/2}$  = Standard normal deviate at 95% confidence interval (1.96)

$p$  = Proportion of children within CCIs that we estimate to receive the 5 essential 5 PHC elements (0.55)

$d$  = desired error margin = 0.05.

Therefore  $N = 1.96 \times (0.55)(0.45)/0.05 = 385$

#### **4.9. Recruitment**

Only two government sponsored CCIs were eligible based on the inclusion criteria and both included in to the study. However, only one consented for the study.

18 CCIs were then randomly selected from the non-public CCIs because it was previously estimated through a pilot survey that 20 CCIs will be needed to reach the required sample size. At this point 14 out of the 18 selected CCIs declined to consent for the study. We therefore decided to recruit more CCIs continuously through a convenient sampling until the required sample size was achieved across 6 sub counties. We had previously randomly selected 4 sub counties (we added two new sub counties in to the list; Kasarani and kibera) through simple random sampling method.

Within the CCI, Informed written Consent was then obtained from the CCI manager (Annex 3). The principal investigator then identified the children who met the inclusion criteria from facility record book and retrieved their personal files. Data was obtained from the facility records for the children without personal files. Administration of the study tool (annex 4) to the CCI managers who consented to participate in the study and extraction of data from the children's records (personal files and facility records) was done. The data from the children's files were found to be incomplete and not all the children had personal files. This posed a serious limitation for the study.

#### **4.10 Data collection**

Structured questionnaires were presented to the CCI managers to obtain information on the CCI (annex 4 part one). The facility demographics such as name, code, Sub County, age group of children, staffing levels and services offered was captured in the first part of the data collection tool that was administered to the CCI managers.

Data on age, sex, and length of stay in the current CCI, immunization, vitamin supplementation, deworming status and HIV testing was obtained from the individual children's files. Anthropometric measurements including weight, height/length and MUAC were taken by the researcher and research assistant who was trained on the weight, height and MUAC measurements prior to the study. These measurements were taken for every child.

- Length was measured using a commercially procured an inelastic tape measure with the child lying on level ground against a flat surface and was recorded in centimeters to one decimal point.

- Weight was measured using an electronic scale (CISONE model C5 8316, commercially procured) and was recorded in kilograms to one decimal point.
- MUAC- On a bent left arm, with a pen, midpoint between the olecranon process and acromion was determined. With the arm hanging straight down, a MUAC tape was wrapped around the arm at the midpoint mark. Measurement was taken to the nearest 1 mm.

Two measurements were taken for each parameter that was measured and an average was obtained to the nearest 0.1 decimal point. Nutritional status was then determined using the WHO 2006 standard charts. (See Annex 4 part 3).

Data on immunization was recorded as either fully immunized for age or not. A child aged 6 months was considered fully immunized if BCG, Polio3, pentavalent-3 and 3<sup>rd</sup> pneumococcal vaccine 3 have been administered. From 6 months to one year we considered BCG, Polio3, pentavalent 3, 3<sup>rd</sup> pneumococcal vaccine3 and 9 months measles vaccine as full immunization. From 1 year to 18 months full immunization was considered for a child who has received all the 1<sup>st</sup> year immunizations and 18<sup>th</sup> month measles vaccine. Data was obtained on vitamin A supplementation over the 6 month period preceding the study and recorded as either supplemented or not on the data collection tool.

Information was obtained on deworming status for every child aged above one year. One episode of deworming was considered as dewormed for every child above one year. This data was entered in to structured questionnaire. Data was then collected from the individual children's files on whether a HIV test was been done or not. Data was then entered in to a manual data collection tool.

#### **4.11 Data management and analysis**

Quantitative data from questionnaires was checked daily for completeness and coded for entry. Incomplete questionnaires were regarded as spoilt data and therefore not analyzed. Data was entered into Microsoft Access (2016) database and transferred to Stata software version 15.1 (StataCorp. 2017. Stata Statistical Software: Release 15. College Station, TX: StataCorp LLC) for cleaning and analysis. Descriptive summary statistics of baseline child and facility characteristics was analyzed using univariate analysis and presented as frequencies and

proportions for categorical data and presented in a table. Graphical displays using pie charts and bar graphs were also presented for the categorical data. Mean and median was used for continuous data.

Bivariate analyses were carried out to assess for differences in the outcome (receipt of complete service or care) by child and facility level characteristics using chi squares and reporting p values. A p value of  $<0.05$  was used to define statistically significant associations.

#### **4.12 Ethical considerations**

Permission was sought from the Kenyatta National Hospital and UON Ethics Research Committee to carry out this study as part of the thesis dissertation. Copies of this protocol, the informed consent form as well as any modifications that may arise was presented to this committee for written approval prior to commencing the study. Permission was also sought from the NCCS, National Commission for Science Technology and Innovation (NACOTSI) and children's departments of the different sub counties in Nairobi County. Consent was also obtained from the CCI managers of the selected CCIs using specially designed consent forms. The study was fully explained to the CCI managers prior to obtaining consent verified by a signature by the CCI manager to participate in the study.

All information was handled with uttermost confidentiality throughout the study period, held in trust by the investigator, research assistants and the study institution. A password protected computer with access to only the primary investigator and research assistant was used. The research assistant was trained on ethical research conduct and data confidentiality before the research was conducted. The participants were given study identification numbers and no information concerning the study subjects was released to an unauthorized third party without prior written approval of the study institution or the Ethics Research Committee.

All patient information and identifiers was delinked from the collected data before sending data to the data analyst. Any information necessary for management of the child was communicated to the CCI management. CCIs was given unique identifiers which was used during data collection to protect their identity. The findings from the study will be availed NCCS, the different sub County children's department officers and the CCI managers. The study findings will be presented to the University of Nairobi, Department of Pediatrics and Child Health faculty and students as part of the requirement of the M.Med course.

## 5.0: RESULTS

### 5.1 Descriptive analysis of the children

A total of 388 children were recruited in to the study. There were almost equal number of distribution of male (199) and female (189) children. 138(35.5%) were aged between 6-12 months, 135(34.79%) were aged 13-18 months and the rest between 19-24 months as shown in the table1 below.

**Table 1: Age and sex description of the children**

Age in month	Sex		Total
	Female	Male	
<b>6-12 months</b>	62[32.8%]	76[38.2%]	138[35.6%]
<b>13-18 months</b>	69[36.5%]	66[33.1%]	135[34.8%]
<b>19-24 months</b>	58[30.7%]	57[28.6%]	115[29.6%]
<b>Total</b>	189[48.7%]	199[51.3%]	388
Pearson chi2 (2) = 1.2387 Pr = 0.538			

**Table 2: number of CCIs in each facility type and number of children**

FacilityType	No. of facilities	Number of children
<b>CBO/NGO/Private</b>	9 (75%)	342 (88.1%)
<b>Church/Religion</b>	2 (16.7%)	21 (5.4%)
<b>Government</b>	1 (8.3%)	25 (6.4%)
<b>Total</b>	12 (100%)	388 (100%)

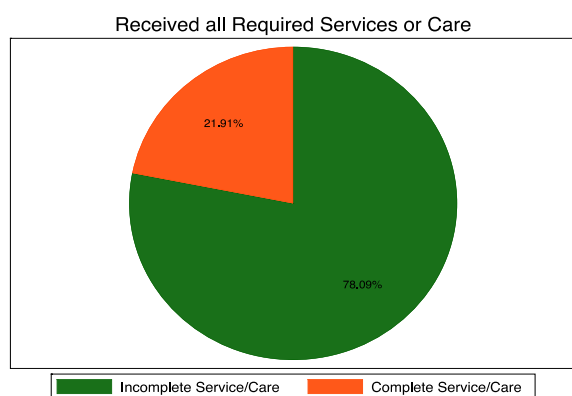
Majority of the facilities were CBO/NGO/Private based facilities (75%) and 88.1% of study participants were from CBO/NGO based facilities as shown in the table2 above.

**Table 3: Sex distribution in the different facility type**

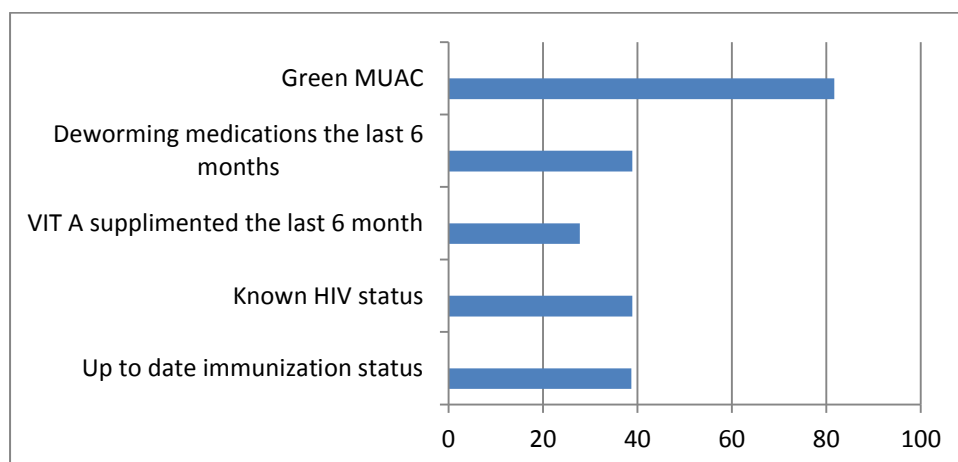
FACILITY TYPE	SEX		
	Female (n=189)	Male (n=199)	Total (n=388)
<b>CBO/NGO/Private</b>	168 (49.1%)	174(50.9%)	342(100%)
<b>Faith based</b>	6 (28.6%)	15(71.4%)	21(100%)
<b>government</b>	15 (60%)	10(40%)	25(100%)
<b>Total</b>	189(48.7%)	199(51.3%)	388(100%)
<i>Pearson chi2(2) = 4.7078 Pr = 0.095</i>			

There were more males in Faith based (71.4%) and CBO/NGO/Private facilities (50.9%) as compared to females as shown in the table 4 above.

**5.2 proportion of children who received all the 5 essential PHC elements**



**5.3 Child health indices in the different facility types**



**Figure 2: PHC Elements coverage**

The figure above shows that 18% of the children were wasted, 38.7% of the children had an up to date immunization status and 39% had a known HIV status.

#### **5.4 coverage of the phc elements at the different facility types**

**Table 4: immunization coverage based on the facility type**

<b>FACILITY TYPE</b>	<b>UPTO DATE IMMUNIZATION</b>	<b>NOT UP TO DATE IMMUZATION</b>	<b>TOTAL</b>
<b>CBO/NGO/PRIVATE</b>	139 (40.6%)	203(59.4%)	342
<b>FAITH BASED</b>	11 (52.4%)	10(47.6%)	21
<b>GOVERNMENT</b>	0 (0%)	25(100%)	25
<b>TOTAL</b>	150 (38.7%)	238(61.3%)	388(100%)
<b>Pearson chi2(2) = 17.9909 Pr = 0.000</b>			

Only 38.7% of the children had an up to date immunization. Faith based institutions had better immunization coverage (52.4%) as compared to CBO/NGO/Private (40.6%) and government facilities had the worst coverage at (0%).

**Table 5: HIV status per facility type**

<b>HIV STATUS</b>				
<b>FACILITY TYPE</b>	<b>NEG</b>	<b>POSITIVE</b>	<b>UNKNOWN</b>	<b>Total</b>
<b>CBO/NGO/PRIVATE</b>	114(33.3%)	21(6.1%)	207(60.5%)	342
<b>FAITH BASED</b>	13(61.9%)	3(14.3%)	5(23.8%)	21
<b>GOVERNMENT</b>	0(0%)	0(0%)	25(100%)	25
<b>TOTAL</b>	127(32.7%)	24(6.2%)	237(61.7%)	
<b>Pearson chi2(4) = 28.4485 Pr = 0.000</b>				

Table 5 above shows the government facility had none of the children's HIV status known.

**Table 6: Vitamin A supplementation per facility type**

<b>Vitamin A Supplemented</b>			
<b>FACILITY TYPE</b>	<b>NO</b>	<b>YES</b>	<b>TOTAL</b>
<b>CBO/NGO/PRIVATE</b>	242(62.4%)	95(24.6%)	342(88.1%)
<b>FAITH BASED</b>	8(38.1%)	13(61.9%)	21(5.4%)
<b>GOVERNMENT</b>	25(100%)	0(0%)	25(6.4%)
<b>TOTAL</b>	280(72.1%)	108(27.8%)	388(100%)
<b>Pearson chi2(2) = 21.7784</b>			
<b>Pr = 0.000</b>			

The table above shows that 108(27.8%) children had vitamin A supplement given at least once in the 6 months preceding the study. the highest supplementation was in CBO/NGO/Private(24.6%) while the lowest was at the government facility (0%) where none of the children received vitamin A supplementation.

**Table 7: Deworming medicines given the last 6 months per facility type**

<b>Deworming medicines given</b>			
<b>Facility type</b>	<b>NO</b>	<b>YES</b>	<b>TOTAL</b>
<b>NGO/CBO/private</b>	140(64.5%)	77(35.5%)	217(100%)
<b>Faith based</b>	7 (58.3%)	5(41.7%)	12(100%)
<b>Government</b>	13(61.9%)	8 (38.1%)	21(100%)
<b>Total (n=250)</b>	160(64%)	90(36%)	250(100%)
<b>Pearson chi2(2) =14.4322 Pr = 0.001</b>			

There were 90 (36%) children who were given deworming medicines at least once in the 6 months preceding the study.



**Table 8: WHZ Categories**

<b>WHZ scores Category</b>	<b>Normal (n=217)</b>	<b>Mild malnutrition (n=58)</b>	<b>Moderate Malnutrition (n=59)</b>	<b>Severe Malnutrition (n=53)</b>	<b>Total (n=387)</b>
<b>Facility Type</b>					
<b>CBO/NGO/Private</b>	187(54.8%)	48(14.1%)	55(16.1%)	51(15%)	341(100%)
<b>Church/Religion</b>	7(33.3%)	8(38.1%)	4(19%)	2(9.5%)	21(100%)
<b>Government</b>	23(92%)	2(8%)	0(0%)	(0%)	25(100%)
<b>Total</b>	217	58	59	53	387
<b>Total [Col%]</b>	56.1	15	15.2	13.7	100

There were 13.7% children with severe wasting, of whom 15% were from the CBO/NGO /Private facilities as shown in table 8 above.

**Table 9: MUAC categories for the different facility types**

<b>MUAC in cm</b>	<b>Normal (n=317)</b>	<b>Moderate Malnutrition (n=49)</b>	<b>Severe Malnutrition (n=22)</b>	<b>Total (n=388)</b>
<b>Facility Type</b>				
<b>CBO/NGO/Private</b>	275(80.4%)	48(14%)	19(5.6%)	342(100%)
<b>Church/Religion</b>	17(81%)	10(14.8%)	3(14.3%)	21(100%)
<b>Government</b>	25(100%)	0(0%)	0(0%)	25(100%)
<b>Total</b>	317	49	22	388
<b>Total [Col%]</b>	81.7	12.6	5.7	100

According to the MUAC analysis 12.6% and 5.7% of the children were moderately and severely wasted respectively.

### 5.5: Analysis of the PHC elements by age

**Table 10: IMMUNIZATION, HIV TESTING, VITAMIN A AND DEWORMING COVERAGE**

Age in months	immunization		HIV TESTING			VITAMIN A SUPPLIMENTATION		DEWORMING	
	Up to date	Not up to date	Negative	Positive	Unknown	No	Yes	No	Yes
<b>6-12</b>	81(58.7%)	57(41.3%)	57(41.3%)	10(7.2%)	71(51.4%)	88(63.8%)	50(36.2%)		
<b>13-18</b>	88(65.2%)	47(34.8%)	32(23.7%)	7(5.2%)	96(71.1%)	110(81.5%)	25(18.5%)	92(68.1%)	68(59.1%)
<b>19-24</b>	69(60%)	46(40%)	38(33%)	7(6.1%)	70(60.9%)	82(71.3%)	33(28.7%)	43(31.8%)	47(40.9%)
<b>Total</b>	238(61.3%)	150(38.7%)	127(32.7%)	24(6.2%)	237(61.1%)	280(72.2%)	108(27.8%)	160(64%)	90(36%)
Pearson chi2(2) = 1.3357 Pr = 0.513			Pearson chi2(2) = 1.3357 Pr = 0.513			Pearson chi2(2) = 10.7197 Pr = 0.005		p= 0.098	

Children between 6-12 months had better immunization coverage at (41.3%) as shown in the table above.

In all the age groups more than half of the children have not been tested for HIV.

There were 108 (27.8%) children who had vitamin A supplementation in the last 6 months preceding the study as shown above.

Deworming medicines were given to 90(36%) of the children at least once in the 6 months preceding the study as shown in table above.

**Table 11: Nutritional assessment**

Age in months	WHZ				HEIGHT FOR AGE (stunting)			MUAC category		
	normal	Mild	moderate	severe	Severe	moderate	normal	Severe	Modera te	None/ at risk
<b>6-12</b>	70(50.7%)	17(12.3%)	27(19.6%)	24(17.4%)	43(31.4%)	25(18.2%)	72(52.5%)	16(11.6%)	26(18.8%)	96(69.6%)
<b>13-18</b>	76(56.3%)	22(16.3%)	17(12.2%)	20(14.8%)	23(17%)	42(31.1%)	70(51.8%)	4(3%)	14(10.4%)	117(86.7%)
<b>19-24</b>	71(62.2%)	19(16.7%)	15(13.2%)	9(7.9%)	24(21.2%)	31(27.4%)	58(51.3%)	2(1.7%)	9(7.8%)	104(90.4%)
<b>Total</b>	217(56.1%)	58(15%)	59(15.2%)	53(13.7%)	90(23.4%)	98(25.5%)	200(51.5%)	22(5.7%)	49(12.6%)	317(81.7%)
Pearson chi2(6) = 9.4522 Pr = 0.150					Pearson chi2(12) = 33.8017 Pr = 0.001			Pearson chi2(4) = 24.2513 Pr = 0.000		

Of the total population studied, 13.7% had severe wasting according WHZ scores with highest level of wasting in children between 6-12 months (17.4%) as shown above.

There were 23.4% and 25.5% of children that were severely and moderately stunted respectively as shown above.

5.7% of the children were severely wasted and the age group between 6-12 months had the highest level of severe wasting at 11.6%.

## **6: DISCUSSION**

Kenya is currently home to over 2.6 million orphans and vulnerable children (OVCs), majority of whom (46%), are as a result of Human Immunodeficiency virus/Acquired immunodeficiency syndrome (HIV/AIDS) according to Kenya AIDS indicator survey 2012 (3). More often these children end up in either foster care homes or charitable children institutions (CCIs) in a bid to provide them with collective primary healthcare.

Recent studies have established that children in need of protection are particularly more vulnerable to diseases and malnutrition. This is shown in UNICEF 2004 report (4). Appropriate adoption of the eight primary healthcare (PHC) elements has been proven to be successful in delivery and provision of the appropriate care needed by these children(5) However, the extent of delivery of these PHC elements among children of different age groups within CCIs has not been established making provision of age specific interventions a challenge.

The study involved children between the ages of 6-24 months from CCIs randomly selected from Nairobi County. A total of 388 children were recruited in to the study. There were almost equal number of distribution of male (199) and female (189) children. It is also worth noting 138(35.5%) were aged between 6-12 months, 135(34.79%) were aged 13-18 months and the rest between 19-24 months. There was [48.7%] and [51.3%] female and male distribution respectively.

The adequate provision of the 5 primary healthcare elements being studied in this research is very important for the wellbeing and growth of the children in these age groups. These PHC elements are provided for free for all the under-fives in Kenya today. The period from birth to age of 2 years is especially important for optimal mental health, physical, cognitive growth and development. Unfortunately, this period is often marked with nutrient deficiencies which interfere with optimal growth and may cause common childhood illnesses like acute respiratory tract infections and diarrhea (26). It is therefore important that every child including those in CCIs gets this care.

Majority of the facilities recruited in to the study were CBO/NGO/Private based facilities (75%) and therefore majority of the children 88.1% were from CBO/NGO based facilities. Only 25(6.4%) of the children were recruited from the government facilities.

The distribution of the children in the different facility types have a significance in the sense children in faith based institutions were getting better care compared to their counterparts in the other institutions.

There was 18.9% level of wasting overall according to the MUAC analysis but 13.7% and 15.2% levels of severe wasting according to WHZ score analysis. This discrepancy in the analysis of the MUAC and WHZ score has been demonstrated in several other studies. According to one WHO research article, it was established that only 40% of the time do these two modes of anthropometric measurements agree. It is recommended that MUAC measurement be included in all anthropometric surveys and that the two criteria are not alternative measures but complementary variables that should be used to guide management. The level of wasting in this study is higher than the national level at 4% according to KDHS 2014.

This therefore means that children in CCIs are more wasted than their counterpart in the general population. Wasting is an indicator of acute malnutrition and represents the failure to get adequate nutrition in the period immediately preceding the study. It is usually as the result of inadequate food intake or a recent illness causing loss of weight and the onset of malnutrition.

WHO defines a child to have received all basic immunization when a child has received pentavalent vaccines, BCG, polio and measles vaccines? Kenya immunization program defines basic immunization as the WHO basic immunization plus pneumococcal vaccines (4). The Kenyan definition was used for this study. Over half of the children, 283 (61.3%), did not have an up to date immunization status for age. this is below the national level for immunization coverage as at KDHS 2014 that showed 79% of the children between ages 1 year and 23 months have received all basic vaccinations(4). It is possible that this children have received vaccinations but because there was no mother and child health booklet or personal files for most of the children, there was no way of ascertaining it. The CCI records were generally not updated frequently. The immunization coverage was even lower the national average in North Eastern 51% (4). This has the implication of putting these children at risk of vaccine preventable diseases. There's also the greater risk of disease outbreaks in this institutions such as measles.

Similarly, 237 (61.1%), did not have a known HIV status.

Furthermore, none of the children in the government facilities had received a complete service/care and none had a known H.I.V status .This finding is in agreement with unofficial report by the children’s department and UNICEF that has shown widespread malpractices in CCIs (1). One of the two government facilities has declined to consent for the study despite having relevant authorization from the relevant government authorities.

## **6.0: STUDY LIMITATIONS**

The majority of the children were recruited from CCIs in Embakasi and kamukunji Sub Counties. Therefore the study might not be a representative of the entire Nairobi County. It was also envisioned that 4 Sub Counties will be representative of the target population but it was not possible due to unforeseen resistance by the majority of the CCI managers to consent for the study.

Majority of the CCIs that were sampled declined to consent for the study. This has been a serious limitation in this study as many children had to be recruited from 2 CCIs in order to meet the required sample size. There was no proper records keeping. There were no personal files for the children. We had to rely on facility records for the data collected for the study. It was established that there’s significantly large number of CCIs not registered with the children’s department making their accessibility difficult.

## **7.0: CONCLUSION**

The current study concluded that the proportion of children in CCIs within Nairobi County that were receiving adequate childhood primary health care such as immunization was very minimal at 21.91%. There’s inadequate provision of primary healthcare to children aged 6-24 months in CCIs within Nairobi County.

## **8.0: RECOMMENDATIONS**

- There is need to conduct a qualitative study with focused group discussions needs to be done to establish the poor state of primary healthcare delivery to these children.
- All CCIs must be registered with the children’s department to aid in accessibility and monitoring of these facilities.
- Further study needs to be done to establish the delivery of primary healthcare to Children older than 24 months.

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## ANNEXES

### **Annex 1:APPLICATION LETTER TO ERC**

Dr Rukia Mohamed Aden (MBChB)

H58/80892/2015

The Chairperson,  
Ethics, Research and Standards Committee,  
Kenyatta National Hospital and University of Nairobi,  
P.O. Box 20723,  
NAIROBI

Thro'  
The Dean,  
College of Health Sciences

Thro'  
The Chairperson,  
Department of Paediatrics and Child Health

Dear Sir/Madam,

#### **RE: SUBMISSION OF MASTERS DEGREE RESEARCH PROPOSAL FOR APPROVAL**

I wish to submit my research proposal for approval by your committee. I am currently a second year student pursuing a Masters Degree in Pediatrics and Child Health at the University of Nairobi, College of Health Sciences.

Yours Sincerely,

Dr. Rukia Mohamed Aden.  
Department of Pediatrics and Child Health  
College of Health Sciences  
University of Nairobi

**Annex 2: APPLICATION LETTER TO THE CHILDREN DEPARTMENT**

Dr Rukia Mohamed Aden (MBChB) H58/80892/2015.

The Chairperson,  
National Council of Children Services,  
Department of Children's Services,  
Ministry of gender, children and social development.

The County Children services officer  
Nairobi County  
NAIROBI

Thro"  
The Dean,  
College of Health Sciences

Thro"  
The Chairperson,  
Department of Paediatrics and Child Health

Dear Sir/Madam,

**RE: APPLICATION FOR APPROVAL TO CARRY OUT A STUDY**

I wish to request your approval to carry out a non –invasive study on the primary health care practices in selected Charitable Children Institutions in Nairobi County. I am a second year student pursuing a Masters Degree in Pediatrics and Child Health at the University of Nairobi, College of Health Sciences.

Yours Sincerely,

Dr. Rukia Mohamed Aden.  
Department of Pediatrics and Child Health  
College of Health Sciences  
University of Nairobi

## **Annex 3 INFORMED CONSENT**

### **Study Title:**

#### **Childhood primary health care practices in selected charitable children's institutions within Nairobi County**

This informed consent form has two parts;

- Information sheet (to share information about the study with you).
- Certificate of consent (for signature if you choose to participate) You will be given a copy of the full informed consent form.

### **Part I: Information Sheet**

**Introduction:** I am Dr. Rakia Mohamed Aden, postgraduate student at the Department of Pediatrics and Child Health in the University of Nairobi. I am conducting a research to find out the childhood primary health care practices in selected charitable children's institutions within Nairobi County as part of the requirements for post graduate degree. My supervisors from University of Nairobi are Prof Francis Onyango and Dr. Beatrice Mutai.

#### **What is Primary health care?**

Primary health care, defined as essential health care that is scientifically sound and socially acceptable methods and technology made universally accessible to the members of the community and families at an affordable cost through participation in an attempt at achieving health for all.

WHO proposes the provision of primary health care services to all children as a basic human right; this is irrespective of the social status. These services include: education concerning prevailing health problems and methods of preventing and controlling them; promotion of food supply and proper nutrition; an adequate supply of safe water and basic sanitation; maternal and child health; immunization against major infectious diseases; prevention and control of major endemic diseases; appropriate treatment of common diseases and provision of essential drugs.

In line with this, all governments are tasked to formulate national policies, strategies and plans of action to launch and sustain PHC as part of comprehensive national health system. In Kenya, all children under five years are provided with free medical care, including mental health, dental health and management of HIV/AIDS. CCIs are therefore responsible for ensuring that the children under their care receive appropriate medical management, including immunization and growth monitoring.

#### **Purpose of the Study**

The overall purpose of this study is to assess childhood primary health care practices in selected charitable children's institutions within Nairobi County This research findings is expected to assist me meet my requirements for a Masters of Medicine degree in Pediatrics and Child Health at the University of Nairobi.

The information obtained from this study is of high relevance for future planning at the national level to provide universal healthcare for all including children living in CCIs. **The objectives of the study:** To assess the proportion of children receiving appropriate routine primary childhood health care services in CCIs within Nairobi County

**Procedure:** We invite you and children in your CCI aged between 6 and 24 months to participate in this study. Other selected 19 CCIs will be participating. You will be provided with an informed consent form and a Questionnaire; we shall take the weight of the selected children as well as the height once you consent.

**Benefits:** The information obtained from the study will be shared with relevant authorities to improve on the quality of care given to these children at national level.

**Risks:** This study is not invasive and poses no risk for the children, but they may experience some discomfort from removing heavy clothing and shoes. We are asking you to share with us personal and confidential information and you may feel uncomfortable answering some of them. You do not have to answer if you do not wish to do so.

**Confidentiality:** All personal information gathered from you as my participant in this research will be kept confidential and will be used for the purpose of demonstrating the objectives of study. Any information about you will have a number on it instead of your name. Research data will be stored in a personal computer with computer protected password that is only known to me. Any publication will not be having any identifiers.

**Who to contact:** For any information regarding your rights as a research participant you can contact; The Chairman, Kenyatta National Hospital/University of Nairobi Ethics and research committee which is a committee whose task is to make sure that research participant are protected from harm. Tel. (+254-020)2726300-9 Ext. 44102. Or Dr. Rukia M. Aden, the principal Investigator of this research on Mobile - 0723375229.

## Part II: Consent Form

Name of the CCI .....

Dear CCI manger,

I am Dr Rukia M. Aden a Resident of Pediatrics and child health at the University of Nairobi. I am conducting a research to find out about the Primary Health Care practices in CCIs within Nairobi County. Your CCI has been selected randomly for this study. This study is not invasive and poses no risk for the children. **Insert initials in box**

1. I confirm that I have read and have understood the information sheet for the above study. I have had the opportunity to consider the information, ask questions, and have had these answered satisfactorily.
2. I understand that my participation is voluntary and that I am free to withdraw from the

Study without giving any reason, without my rights being affected.

3. I understand that, under the Data Protection Act, I can at any time ask for access to the information I provide and I can request the destruction of that information if I wish.

4. I agree that the CCI takes part in the study.

Participants Name Signature Date

.....

**Contact Information for the Principal Investigator.**

**Dr. Rukia M. Aden: Mobile No: 0723375229 Email:goirukia@gmail.com**

## FOMU YA KUPATA KIBALI CHA WAZAZI / WALEZI WA WASHIRIKI

### **Kifunguo:**

Hii fomu ya kupata idhini ni kwa ajili ya watoto wa jumba hii ambayo imechaguliwa kwa utafiti, tunuwakaribisha kushiriki katika utafiti huu. Jina la mradi wa utafiti wetu ni "Mazoea ya afya msingi kwa watoto katika majumbani". Mimi ni Dk. Rukia M. Aden, mwanafunzi katika Chuo Kikuu cha Nairobi kutafuta masomo ya utaalumu katika afya ya watoto. Mimi ninafanya utafiti kwa sababu afya ya msingi ni muhimu kwa watoto haswa kwa utekelezaji wa afya kwa kila mtu. Nitakupa taarifa na kukukaribisha kwa utafiti huu. Kunaweza kuwa na baadhi ya maneno ambayo huelewi. Tafadhali uliza na mimi nitachukua muda kukueleza **Sababu ya utafiti:** Afya ya msingi inalenga vipengele ambavyo ni muhimu kwa watoto wa chini wa miaka mitatu. Vipengele hivi vimeonekana ya kwamba ndio mzizi wa kupeana afya bora kwa watoto hawa haswa wale watoto ambao wako katika manyumbani. Kutoka kwa utafiti huu tutaweza kujua ni kiwango gani amavyo tumeweza kutekeza vipengele hivyo kwa watoto wa majumbani. Utafiti utasaida kujua ni nini haswa unatatiza utekelezaji wa vipengele vya afya msingi katika majumba ya watoto katika Nairobi County.

**Maandalizi ya utafiti:** Utafiti huu utahusu kupeana dodoso kwa mwenye kiti wa jumba, kupima kilo au uzito na urefu wa mtoto. Utafiti utafanyiwa kwa njia ya kupitia mahojiano ya moja kwa moja. Kushiriki katika utafiti huu ni wa hiari kabisa. Ni uchaguzi wako kama kushiriki au la. Unaweza kubadilisha mawazo yako baadaye na kuacha kushiriki hata kama walikubaliana awali. Unaweza kujiondoa katika utafiti huu wakati wowote.

**Maadhara:** Utafiti wetu haitamthuru mtoto wako.

Habari kukuhusu ambayo tutakusanya kutoka mradi wa utafiti huu utakuwa siri.

**Mawasiliano:** Kama una maswali yoyote unaweza kuuliza hivi sasa au baadaye, hata pia baada ya utafiti imeanza. Kama unataka kuuliza maswali baadaye, unaweza kuwasiliana nami kupitia nambari hizi: Dr Rukia Mohamed, mobile no. 0723375229. Kama unahitaji kujua zaidi unaweza wasiliana

na Mwenye kiti, „Kenya National Hospital/University of Nairobi Ethics and research committee” hii ni kamati ambayo inashughulika kwa kuhakikisha kwamba utafiti huu hauna madhara +254(020) 2726300-9 Ext 44102.

**Nimesoma/ Nimesomewa maelezo haya na nimepewa nafasi ya kuuliza maswali kuhusu hayo maelezo. Nimeidhini kwa hiari kushiriki katika utafiti huu.**

Jina lako \_\_\_\_\_ Sahihi ya Mshiriki  
\_\_\_\_\_ Tarehe \_\_\_\_\_

**Annex 4: STUDY QUESTIONNAIRE**

**Part one: Information about the CCI 1.11 Facility demographics**

1. Facility Name:.....
2. Facility Code:.....
3. Sub County:.....
4. Facility type (*mark as appropriate*)

Government

Church

NGO

5. Number of children in the facility
6. How are aged between 6-24 months

Boys

Girls

7. Does the facility offer the following services (*mark as appropriate*)

Adequate Nutrition (3 or more meals per day)

Immunization

HIV testing

Deworming

Outpatient services for minor ailments

8. Does the facility have the following cadres of care providers:

Cadre	Qualification	No.	Indicate whether permanently employed (P) or on locum (L) basis
Nurse			
Clinical officer			
Nutritionist			
Nurse aid			



Other (kindly specify)			
1.			
2.			
3.			
4.			

9. a. Does the facility have a referral system for sick children? (*mark as appropriate*)

Yes

No

b. If yes where do the children get referred to?

.....

c. Does the facility have an ambulance or a vehicle for emergency referrals? (*mark as appropriate*)

Yes

No

10. a. Where does the facility get the commodities for the following services from?

Commodity	Source	Frequency of supply
Vaccines		
HIV commodities		
Therapeutic feeds		
Other foodstuffs		

b. Has the facility experienced any stock out for any of the above commodities in the past one year?

Yes

No

If Y, which

Commodity?.....

Period of time (in days) with stock out.....

11. Does the facility records?

Yes

No

keep health related

If yes, which type of records

MOH based paper records  
Facility  based paper records

Electronic Medical Records

12. Performance for key indicators:

Indicator	Period (2016)	Achievement
Immunization status for age	6months 9 months 18 months	
Vitamin administration status		
Deworming status		
HIV testing		

**Part two: Information about individual child**

13. Age (in months)

14. Sex

Male  Female

15. Height (in cm):.....

16. Weight:.....

17. BMI:.....

18. W/H Z score:.....

19. MUAC:.....

20. Immunization status (for age):.....

21. HIV status

Positive  Negative  Unknown

22. Vitamin A supplemented the last 6 months?

Yes  No

23. Deworming medicine given the last 6 months?

No  Yes

**Part 3. ANTHROPOMETRIC MEASUREMENTS FOR THE CHILD**

	1ST MEASUREMENT (to the nearest 0.1)	2ND MEASUREMENT (to the nearest 0.1)	Average (to the nearest 0.1)
Weight in kilograms			
Height in centimetres			
MUAC in centimetres			
WHZ score			

### Annex 5: BUDGET

ACTIVITY/ITEM	NUMBER	COST PER UNIT	AMOUNT (Ksh)
Preparation of data collection tools	600 questionnaires, 5 tape recorder, 10 cassettes and writing materials	600 questionnaires each costing 5ksh, total=3,000ksh. 3tape recorder each costing 266.67 total=800ksh. 10cassettes each costing 100=1,000 Writing materials=5000ksh	9,800ksh
Personnel hiring and training	2 personnel to assist in collection of data for 5 days	10,500ksh per person	21,000ksh
Pre-testing data collection tool	Principal researcher will be involved	3,000ksh for 5days	15,000ksh
Data Collection and Communication	Airtimes & transportation	300ksh for 10days	3,000ksh
Data Management and Analysis	Writing materials Buying software	10,000ksh writing material 30,000ksh Buying software and consultation	40,000ksh
Printing and Binding	Cost in printing Cost in Binding	15,000ksh in Binding 10,000ksh in printing	25,000ksh
10% contingency			10,000ksh
<b>TOTAL PROJECT EXPENSES</b>			<b>123,800ksh</b>

**Annex 6: TIME FRAME**

<b>Month/Activity</b>	<b>Sept</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>	<b>Jan</b>	<b>Feb</b>	<b>March</b>	<b>April</b>
<b>Developing the project proposal</b>								
<b>Proposal submission for approval and ethical clearance</b>								
<b>Data collection</b>								
<b>Data cleaning, Data entry and Analysis</b>								
<b>Writing and submission of thesis</b>								
<b>Manuscript writing and submission?</b>								

## Annex 7: CCIs IN NAIROBI PER SUB COUNTY

Sub County	Sub County (Children offices)	Number of CCIs
Kasarani, Njiru	Kasarani	107 65
Dagoretti North Dagoreti South	Dagoretti	90
Langata Kibra	Langata	85
Roysambu		
Westlands	Westlands	39
Mathare Starehe	Starehe	46
Ruaka	Ruaka	unknown
Kamukunji	Kamukunji	23
Embakasi North, Embakasi East, Embakasi Central, Embakasi South, Embakasi West	Embakasi	41
Makadara	Makadara	9