Factors Influencing the Effectiveness of Integrated Management of Childhood Illnesses Among Mothers of Children attending the Mother Child Health/ Family Planning Clinic at Pumwani Maternity Hospital, Nairobi, Kenya

Vicky Chelagat Maiyo
TM310-1873/2011

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DECLARATION

This thesis is my original work and has not been presented for a degree in any other university.

Signature .....Date 17/09/2019

Vicky Chelagat Maiyo

This thesis has been submitted for examination with our approval as the university supervisors.

Signature .....Date 17/09/2019

Prof. Kenneth Ngure

JKUAT, Kenya

Signature .....Date 19/9/19

Dr. Peter Wanzala

KEMRI, Kenya

DEDICATION

To my parents, Engineer and the late Mrs. Arphaxad K. Maiyo, all this could not have been possible without you.

To my husband Allen, your patience, support, words of encouragement and absolute confidence in my capabilities made this a reality.

To my children Niña, Nathan and Alvin, every time I count my blessings you are right up there.

To my siblings Memo, Chiri and Kim.

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Finally, to the all the mothers out there taking care of their children to the best of their ability.

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ABBREVIATIONS and ACRONYMS

ANC	Antenatal Clinic
AOR	Adjusted Odds Ratio
ARI	Acute Respiratory Illness
BCG	Bacillus Calmette-Guéri
CHMT	County Health Management Team
CI	Confidence Interval
CREHS	Consortium for Research on Equitable Health Systems
c-IMCI	community Integrated Management of Childhood Illnesses
DPT-HepB-Hib	Diphtheria, Pertussis and Tetanus, Hepatitis B, Haemophilus influenzae type B
ERC	Ethical Review Committee
EBF	Exclusive Breastfeeding
ESARO	Eastern and Southern Regional Office
FGD	Focus Group Discussion
f-IMCI	facility Integrated Management of Childhood Illnesses
HIV/AIDS	Human Immune Deficiency Virus/ Acquired Immune Deficiency Syndrome
IBM	International Business Machines
IMCI	Integrated Management of Childhood Illnesses
IMR	Infant Mortality Rate
KII	Key Informant Interviews
MCE	Multi-Country Evaluation
MCH/FP	Mother and Child Health/ Family Planning
MS	Microsoft
RR	Relative Risk
OPD	Out patient Department
OR	Odds Ratio
ORS	Oral Rehydration Salts
SCHMT	Sub County Health Management Team
SPSS	Statistical Package for the Social Sciences
SDG	Sustainable Development Goals

U5MR	Under 5 Mortality Rate
UNDP	United Nation's Development Fund
UNICEF	United Nations Children's Fund
WHO	World Health Organization

DEFINITION OF TERMS USED IN THE STUDY

Asphyxia	A multi-etiologic set of conditions in which there is inadequate delivery, uptake and/or utilization of oxygen by the body's tissues/ cells often accompanied by carbon dioxide retention.
Child immunization status	A research variable where the respondent's child on the day of interview is either fully immunized or not fully immunized for their age.
Child morbidity status	A research variable where the respondent's child on the day of interview is either well or unwell.
Child weight status	A research variable where the respondent's child on the day of interview is either underweight or overweight.
Confidentiality	Protection of the identity of the research subject from being discovered.
Immunization	Process by which an individual is made immune or resistant to an infectious didease, typically by administration of a vaccine.
Infant mortality rate	The number of death per 1000 live births of children under one year of age
Malnutrition	Deficiencies, excesses or imbalances in a person's intake of energy and /or nutrients (WHO, 2016)
Morbidity	An incidence of disease; the rate of illness
Mortality	The number of deaths in a given time or place; the proportion of deaths to the population
Neonatal	Period of the first 28 days of an infant's life.
Primary health care	This is a whole-of-society approach to health and well being centered on the needs and preferences of individuals, families and communities (WHO, 2019)
Under 5s	A child of less than 5 years of age
Undernutrition	Undernutrition denotes insufficient intake of energy and nutrients to meet an individual's needs to maintain good health (Maleta, 2006)
Underweight	Moderate and severe - below minus two standard deviations from median weight for age of reference population; severe -

	below minus three standard deviations from median weight for age of reference population.
Effectiveness of IMCI	Measured using child morbidity satatus, child weight status and child immunization status quantitavely and qualitatively using health worker and policy factors.

ABSTRACT

The Sustainable Development Goals adopted by the United Nations in 2015 were developed to promote healthy lives and well-being for all children. The SDG Goal 3 is to end preventable deaths of newborns and under-5 children by 2030. Currently the infant mortality rate in Kenya is 39 deaths per 1,000 live births and under-5 mortality is 52 deaths per 1,000 live births. Since 1999 the Government of Kenya has introduced the Integrated Management of Childhood Illness (IMCI) in an attempt to reduce child mortality. The main objective of this study was to determine the factors influencing the effectiveness of the IMCI strategy among mothers attending the MCH/FP clinic at Pumwani Maternity Hospital. A cross-sectional survey was used in which quantitative data was collected using structured questionnaires and qualitative data was collected using key informant interviews and focus group discussions. The study comprised a sample size of 385 mothers, 2 groups of mothers attending the MCH/FP clinic and 3 health workers at the clinic. Quantitative data was entered using MS Access software and was analysed using IBM's SPSS version 23. Pearson's Chi-square test was used to test the strength between categorical varibles and a Binary logistic regression was used for the multivariate analysis. Odds Ratio (OR) and 95% Confidence Interval (CI) were used to estimate the strength of association between independent and the dependent variables (effectiveness of IMCI). The threshold for statistical significance was set at $p<0.05$. Qualitative data was analysed thematically. Ethical approval was sought from KEMRI and ERC and written informed consent from the participants. The results showed that the IMCI strategy was not fully effective. About 21.6% of the children had various ailments, 25.7% were underweight and about 11% had not been fully immunized for their ages. Living in Nairobi, practicing the Christian faith, starting complementary feeding at 6 – 9 months, mentorship and training of health workers, increasing health worker numbers in facilities, availability of job aids, support supervision and improving the community health strategy are factors influencing the effectiveness of IMCI. The National and County governments need to have focused health information promotion to the caregivers and community on the importance of regular interaction with a health facility or health workers, regular mentorship and trainings for the health workers, increase the number of health workers in the facilities, avail job aids, regular support supervision and regular trainings and increasing the community health worker numbers. Information from this study will help in the formulation of evidence based decisions by policy implementers to improve the effectiveness of the IMCI strategy in preventing childhood morbidity and mortality.

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background

The Sustainable Development Goals (SDGs) adopted by the United Nations in 2015 were developed to promote healthy lives and well-being for all children. The SDG Goal 3 is to end preventable deaths of newborns and under-5 children by 2030. There are two targets:

- Reduce newborn mortality to at least as low as 12 per 1000 live births in every country (SDG 3.2); and
- Reduce under-five mortality to at least as low as 25 per 1000 live births in every country (SDG 3.2) (World Health Organization, 2018).

Substantial global progress has been made in reducing child deaths since 1990. The total number of under-5 deaths worldwide has declined from 12.6 million in 1990 to 5.4 million in 2017 – 15 000 every day compared with 34 000 in 1990. Since 1990, the global under-5 mortality rate has dropped by 58%, from 93 deaths per 1 000 live births in 1990 to 39 in 2017 (WHO, 2018).

Although the world as a whole has been accelerating progress in reducing the under-5 mortality rate, disparities exist in under-5 mortality across regions and countries. Sub-Saharan Africa remains the region with the highest under-5 mortality rate in the world, with 1 child in 13 dying before his or her fifth birthday, 14 times higher than in high income countries. Inequity also persists within countries geographically or by socio-economic status. In 2017 alone, some 4.4 million deaths could have been averted had under-5 mortality in each country been as low as in the lowest mortality country in the region; the total number of under-5 deaths would have been reduced to one million (WHO, 2018).

The leading causes of death among children under five in 2017 were preterm birth complications, acute respiratory infections, intrapartum-related complications, congenital anomalies and diarrhea. Neonatal deaths accounted for 47% of under-5 deaths in 2017 (WHO, 2017). Ending preventable child deaths can be achieved by providing immediate and exclusive breastfeeding, improving access to skilled health professionals for antenatal, birth,

and postnatal care, improving access to nutrition and micronutrients, promoting knowledge of danger signs among family members, improving access to water, sanitation and hygiene and providing immunizations. Many of these lifesaving interventions are beyond the reach of the world's poorest communities (WHO, 2017).

More than half of under-5 child deaths are due to diseases that are preventable and treatable through simple, affordable interventions. Malnourished children, particularly those with severe acute malnutrition, have a higher risk of death from common childhood illness such as diarrhoea, pneumonia, and malaria. Nutrition-related factors contribute to about 45% of deaths in children under-5 years of age (WHO, 2019).

The importance of malnutrition as an underlying cause of death for children aged under five years has been recognized for many years and has recently been reconfirmed: 53% of all of these child deaths could be attributed to underweight and 35% of deaths are due to the effect of undernutrition on diarrhea, pneumonia, malaria and measles. Deaths of children under five years of age are increasingly concentrated in the African Region, at 43% of the global total in 2003, up from 31% in 1990. Of an estimated 10.6 million children under five years of age who died each year during 2000–2003, some 4.4 million died in the African Region, according to World Health Organization estimates. Every day an estimated 12 000 children die in sub-Saharan Africa from easily preventable or treatable illnesses and conditions, such as pneumonia, diarrhea, measles, malaria and malnutrition (Save the Children, 2008).

In Kenya, the infant mortality rate is 39 deaths per 1,000 live births and under-5 mortality is 52 deaths per 1,000 live births. At these levels, about one in every 26 Kenyan children dies before reaching age 1, and about one in every 19 does not survive to his or her fifth birthday. All early childhood mortality rates declined between the 2003 and 2014 KDHS surveys shows neonatal mortality has exhibited the slowest rate of decline (33 %) (KNBS, 2015).

1.1.1 Key child health issues in Kenya

1.1.1.1 Vaccine Coverage

Universal immunisation of children against six common vaccine-preventable diseases, namely tuberculosis, diphtheria, whooping cough (pertussis), tetanus, polio, and measles, is crucial to reducing infant and child mortality. According to the guidelines developed by the WHO, children are considered to have received all basic vaccinations when they have received a vaccination against tuberculosis (also known as BCG), three doses each of the DPT-HepB-Hib (also called pentavalent) and polio vaccines and a vaccination against measles. The Kenyan immunisation programme considers a child to be fully vaccinated if the child has received all basic vaccinations and three doses of the pneumococcal vaccine. Only 75% are fully vaccinated according to the KDHS 2014 report. A study by Maina, Karanja and Kombich (2013) carried out in a peri-urban area in Kenya, found that complete immunization coverage was 76.6%.

1.1.1.2 Acute respiratory infection

Acute respiratory infection (ARI) is a leading cause of childhood morbidity and mortality throughout the world. Early diagnosis and treatment with antibiotics can reduce the number of deaths caused by ARI. In the KDHS 2014 survey, 9% of children under age 5 were ill with symptoms of an ARI in the two weeks before the survey. These symptoms are consistent with pneumonia.

1.1.1.3 Fever

Fever is a symptom of malaria and other acute infections in children. Malaria and other illnesses that cause fever contribute to high levels of malnutrition and mortality. Twenty-four percent of children under age 5 had a fever in the two weeks preceding the survey. Fever was least common among children under age 6 months (17%) and most common among children age 6-23 months (30-31%) (KNBS, 2015).

1.1.1.4 Diarrheal disease

Dehydration caused by severe diarrhea is a major cause of morbidity and mortality among young children, although the condition can be easily treated with oral rehydration therapy (ORT). Exposure to diarrhea-causing agents is frequently related to the use of contaminated

water and to unhygienic practices in food preparation and disposal of excreta. In the 2014 KDHS report, 16% of children under age 5 had diarrhoea, with 2% having bloody diarrhoea. Diarrhoea prevalence is highest among children age 6-11 and 12-23 months (27% and 24%, respectively (KNBS, 2015). Tornheim *et al.* (2010), found that diarrhea was responsible for 11.2% (*n*=2158) of hospitalizations in a sudy carried out in Bondo district, Kenya.

1.1.1.5 Nutrition

Adequate nutrition is critical to children's growth and development. The period from birth to age 2 years is especially important for optimal physical, mental, and cognitive growth, health, and development. Unfortunately, this period is often marked with nutrient deficiencies that interfere with optimal growth and may cause common childhood illnesses such as diarrhoea and acute respiratory infections. Eleven percent of Kenyan children are underweight (low weight-for-age) with peak levels being found among children older than age 12 months (KNBS, 2015). A study by Ndemwa *et al.*(2017) found that malnutrition prevalence for children in Kwale was high with 29.2% of the children being stunted and 13.4% being severely stunted. Underweight prevalence was at 20.8% of whom 9.5% were severely underweight.

1.1.2 Integrated Management of Childhood Illnesses

1.1.2.1 Definition of Integrated Management of Childhood Illnesses

IMCI is an integrated approach to child health that focuses on the well-being of the whole child. IMCI aims to reduce death, illness and disability, and to promote improved growth and development among children under five years of age. IMCI includes both preventive and curative elements that are implemented by families and communities as well as by health facilities.

The strategy includes three main components:

- Improving case management skills of health-care staff
- Improving overall health systems
- Improving family and community health practices (WHO 2019).

1.1.2.2 The Integrated Management of Childhood Illnesses case management guidelines (facility- Integrated Management of Childhood Illnesses)

Integrated case management relies on case detection using simple clinical signs and empirical treatment. As few clinical signs as possible are used. The signs are based on expert clinical opinion and research results, and strike a careful balance between sensitivity and specificity. The treatments are developed according to action oriented classifications rather than exact diagnosis. They cover the most likely diseases represented by each classification. The IMCI process can be used by doctors, nurses and other health professionals who see sick infants and children aged from 1 week up to five years. It is a case management process for a first-level facility such as a clinic, a health centre or an outpatient department of a hospital. The IMCI guidelines describe how to care for a child who is brought to a clinic with an illness, or for a scheduled follow up visit to check the child's progress. The guidelines give instructions for how to routinely assess a child for general danger signs (or possible bacterial infection in a young infant), common illnesses, malnutrition and anemia, and to look for other problems. In addition to treatment, the guidelines incorporate basic activities for illness prevention. The complete IMCI case management process involves the following elements: Assessing a child by checking first for danger signs (or possible bacterial infection in a young infant), asking questions about common conditions, examining the child, and checking nutrition and immunization status. Assessment includes checking the child for other health problems. Classify a child's illnesses using a color-coded triage system. Because many children have more than one condition, each illness is classified according to whether it requires:

* urgent pre-referral treatment and referral (red), or
* specific medical treatment and advice (yellow), or
* simple advice on home management (green).

After classifying all conditions, identify specific treatments for the child. If a child requires urgent referral, give essential treatment before the patient is transferred. If a child needs treatment at home, develop an integrated treatment plan for the child and give the first dose of drugs in the clinic. If a child should be immunized, give immunizations. Provide practical treatment instructions, including teaching the caretaker how to give oral drugs, how to feed and give fluids during illness, and how to treat local infections at home. Ask the caretaker to return for follow-up on a specific date, and teach her how to recognize signs that indicate the child should return immediately to the health facility. Assess feeding, including assessment of breastfeeding practices, and counsel to solve any feeding problems found. Then counsel the

mother about her own health. When a child is brought back to the clinic as requested, give follow-up care and, if necessary, reassess the child for new problems (WHO, 2005).

The IMCI guidelines address most, but not all, of the major reasons a sick child is brought to a clinic. A child returning with chronic problems or less common illnesses may require special care which is not described by the IMCI guidelines. The guidelines do not describe the management of trauma or other acute emergencies due to accidents or injuries. Case management can only be effective to the extent that families bring their sick children to a trained health worker for care in a timely way. If a family waits to bring a child to a clinic until the child is extremely sick, or takes the child to an untrained provider, the child is more likely to die from the illness. Therefore, teaching families when to seek care for a sick child is an important part of the case management process. The case management process is presented on two different sets of charts: one for children age 2 months up to five years, and one for children age 1 week up to 2 months. The IMCI case management process is presented on a series of charts that show the sequence of steps and provide information for performing them. This series of charts has also been transformed into an IMCI chart booklet designed to help carry out the case management process. The IMCI chart booklet contains three charts for managing sick children age 2 months up to 5 years, and a separate chart for managing sick young infants age 1 week up to 2 months (WHO, 2005).

1.1.2.3 Household and Community Integrated Management of Childhood Illnesses

Success in reducing childhood mortality requires more than the availability of adequate health services with well-trained personnel. As families have the major responsibility for caring for their children, success requires a partnership between health providers and families, with support from their communities. Health providers need to ensure that families can provide adequate home care to support the healthy growth and development of their children. Families also need to be able to respond appropriately when their children are sick, seeking appropriate and timely assistance and giving recommended treatments (Core Group, 2006).

Although households and communities have a major responsibility to provide care to their children, in most cases they have not been effectively involved or consulted in the development and implementation of programmes meant to address issues related to their

children's health, nutrition, growth, and development. Success in reducing childhood morbidity and mortality requires active and meaningful participation by communities, and partnership between health workers and households with support from their communities. Households and communities need to be empowered with knowledge and skills regarding child health and development. In addition to an enabling environment, in the form of responsive health system and policies, communities need to be mobilized and motivated (United Children's Fund/ Eastern and Southern Africa Regional Office, 1999).

Community-IMCI engages families and communities in discussions about child health and assists them to assess, analyze, and take action on the problems affecting them and their children. It also promotes the participation of parents, other primary caregivers, and communities to sustain new practices that support the changes they have chosen to pursue in child health. Community involvement and capacity development are central to the implementation of c-IMCI (Core Group, 2006). The household and community component of IMCI (HH/c-IMCI) seeks to initiate, reinforce and sustain household practices that are important for child survival, growth, and development within the overall framework of community capacity development (UNICEF/ESARO, 1999).

Globally, 12 key household practices have been identified and agreed upon by major partners. The Eastern and Southern African Region (ESAR), has identified four additional household practices towards prevention of HIV/AIDS, prevention of child abuse and accidents, and participation of fathers in care for children. These practices are generic and are to be adapted according to the local situation and priorities at country, district and community levels (UNICEF/ESARO, 1999).

The 16 key family practices to decrease mortality and morbidity in children under five and enable children to develop and grow include physical growth and mental development,, focusing on breastfeeding infants exclusively for at least six months, starting at about six months of age, feeding children freshly prepared energy and nutrient-rich complementary foods, while continuing to breastfeed up to two years or longer, ensuring that children receive adequate amounts of micronutrients (vitamin A and iron, in particular), either in their diets or through supplementation and promoting mental and social development by responding to a child's needs for care through talking, playing, and providing a stimulating environment. For disease prevention, taking children as scheduled to complete the full course of immunizations

(BCG, DPT, OPV, and measles) before their first birthdays, disposing of feaces, including children's feaces, safely; wash hands after defecation, before preparing meals, and before feeding children, protecting children in malaria-endemic areas by ensuring that they sleep under insecticide-treated bednets and adopt and sustain appropriate behavior regarding prevention and care for HIV/AIDS affected people, including orphans. In practicing appropriate home care, care givers should continue to feed and offer more fluids, including breast milk, to children when they are sick, give sick children appropriate home treatment for infections, take appropriate actions to prevent and manage child injuries and accidents, prevent child abuse and neglect and take appropriate action when it has occurred and ensure that men actively participate in providing childcare and are involved in the reproductive health of the family. In appropriate care seeking behaviour, care givers should recognize when sick children need treatment outside the home and seek care from appropriate providers, follow health worker's advice about treatment, follow-up, and referral and ensure that every pregnant woman has adequate antenatal care. This includes having at least four antenatal visits with an appropriate health care provider and receiving the recommended doses of the tetanus toxoid vaccination. The mother also needs support from her family and community in seeking care at the time of delivery and during the postpartum and lactation period (Core Group, 2006).

1.1.2.4 Integrated Management of Childhood Illnesses in Kenya

Since 1999 the Government of Kenya has introduced the Integrated Management of Childhood Illness (IMCI) in an attempt to reduce child mortality. The IMCI strategy, developed by WHO and UNICEF, aims to improve the management of childhood illness at the primary health care level. By 2007, almost two-thirds of districts were implementing IMCI to some degree, mainly focusing on improving case management skills and health care delivery systems. With support from development partners, training has been provided for managers and front line health workers, reaching a high proportion of the poorest districts (Mullei, Wafula & Goodman, 2008).

IMCI implementation in Kenya has been fairly widespread, with some staff trained in 64% of all districts in the country. The earliest date of first training was 2001, which only targeted 4 districts, namely Kajiado, Embu, Vihiga and Kwale. In 2002, health workers from 3 more districts received case management training (Homa Bay, Nyando and Busia); in 2003, only 2

districts (Nairobi and Kuria); and in 2004, 4 districts (Nakuru, Turkana, Kiambu and Central Kisii). The bulk of training activities took place between 2005 and 2006, covering an additional 16 districts. During early implementation and expansion phases it is likely that donor presence in some districts influenced their selection for IMCI roll out, as donor support was a requirement during this period. Other criteria required that both SCHMTs and CHMTs guaranteed district capacity to hold case management training, such as having appropriate venues for accommodation, a primary care facility (hospital) with a high number of patients in OPD, and the capacity to assist in follow-up supervision (Mullei, Wafula & Goodman, 2008). However, implementation of IMCI remains highly inadequate. The three major challenges are: low training coverage; trained health workers not following guidelines; and barriers to access for community members (Mullei, Wafula & Goodman, 2008).

The Integrated Management of Childhood Illness (IMCI) strategy is central to the achievement of child survival and development. The strategy is based on human rights that guarantee health care to all children, no matter where they live, and is implemented by addressing the gaps in knowledge, skill, and community practices regarding children's health, recognition of illness, home management of the sick child, and appropriate careseeking behaviour. The IMCI strategy includes three important components:

1. Integrated management of ill children in facilities and health centres
2. Health system strengthening, particularly drugs and logistics support
3. Community IMCI, or promotion of key family and community practices

The three components of the IMCI strategy are most effective when they are implemented simultaneously. In Tanzania, IMCI training to improve the skills of health workers for better case management in health facilities, accompanied by health systems strengthening efforts, such as improving the supply of essential drugs, resulted in a 13% reduction in under-5 mortality in two years and in Bangladesh, home care for illness and timely careseeking improved through community IMCI (c-IMCI), while IMCI training increased quality of care at the health facilities (Ketsela *et al.*, n.d).

1.2 Statement of the problem

In Kenya, the infant mortality rate is 39 deaths per 1,000 live births and under-5 mortality is 52 deaths per 1,000 live births. At these levels, about one in every 26 Kenyan children dies

before reaching age 1, and about one in every 19 does not survive to his or her fifth birthday. KDHS surveys show neonatal mortality has exhibited the slowest rate of decline (33 %) (KNBS, 2015). Kenya is not on track to meet SDG 3 to end preventable deaths of newborns and under-5 children by 2030 (WHO, 2018). By 2007, almost two-thirds of districts in Kenya were implementing IMCI, mainly focusing on improving case management skills and health care delivery systems. However, implementation of IMCI remains highly inadequate. The three major challenges are: low training coverage; trained health workers not following guidelines; and barriers to access for community members (Mullei, Wafula & Goodman, 2008).

Pumwani maternity hospital, located in the east side of Nairobi is surrounded by the low-income residential areas of Eastleigh, Mathare, Muthurwa, and Majengo. The MCH/FP clinic at the hospital attends to an average of 315 mothers and their children every month. According to the Kenya Health Information System, in 2018 the hospital attended to 1314 underweight and 987 stunted under 5s. There were also 438 fully immunized children under 1 year and 4188 children under 6 months exclusively breastfed. Tele (2014) found neonatal mortality in Pumwani Maternity Hospital to be 128.33 per 1000 live births.

Despite the unacceptably high prevalence of child morbidity and mortality in Kenya, and the implementation of the IMCI strategy, studies addressing the factors influencing the effectiveness of the IMCI strategy in the country are scarce. The IMCI strategy has over the past years attempted to reduce child mortality and morbidity through preventive and curative elements that are implemented by families and communities as well as by health facilities.

1.3 Justification

The purpose of this study is to identify the factors influencing the effectiveness of IMCI among mothers of children at the MCH/FP clinic at Pumwani Maternity Hospital to enable policy makers to determine the gaps in the IMCI strategy so as to reduce the burden of childhood illnesses. According to WHO (2019), in health facilities, the IMCI strategy promotes the accurate identification of childhood illnesses in outpatient settings, ensures appropriate combined treatment of all major illnesses, strengthens the counselling of caretakers, and speeds up the referral of severely ill children. In the home setting, it promotes appropriate care seeking behaviours, improved nutrition and preventative care, and the correct implementation of prescribed care. However, the 2014 Kenya Demographic Health

Survey reports the under 5 population having 21% not fully immunized, 9% a cough accompanied by short, rapid breathing, 24% fever, and 15% experienced diarrhea.
The findings of this study will inform the National and County governments on measures and interventions to implement in reducing child and infant mortality and morbidity.

1.4 Research questions

This study endeavoured to find out:

1. What is the health status of the children attending the MCH/FP clinic?
2. What are the participant characteristsics and health practices among mothers of the children attending the MCH/FP clinic influencing the effectiveness of IMCI?
3. What are the health worker attitudes and practices influencing the effectiveness of IMCI among mothers attending the MCH/FP clinic?
4. What are the policy factors influencing the effectiveness of IMCI among mothers attending the MCH/FP clinic?

1.5 Objectives:

The main and specific objectives of the study were;

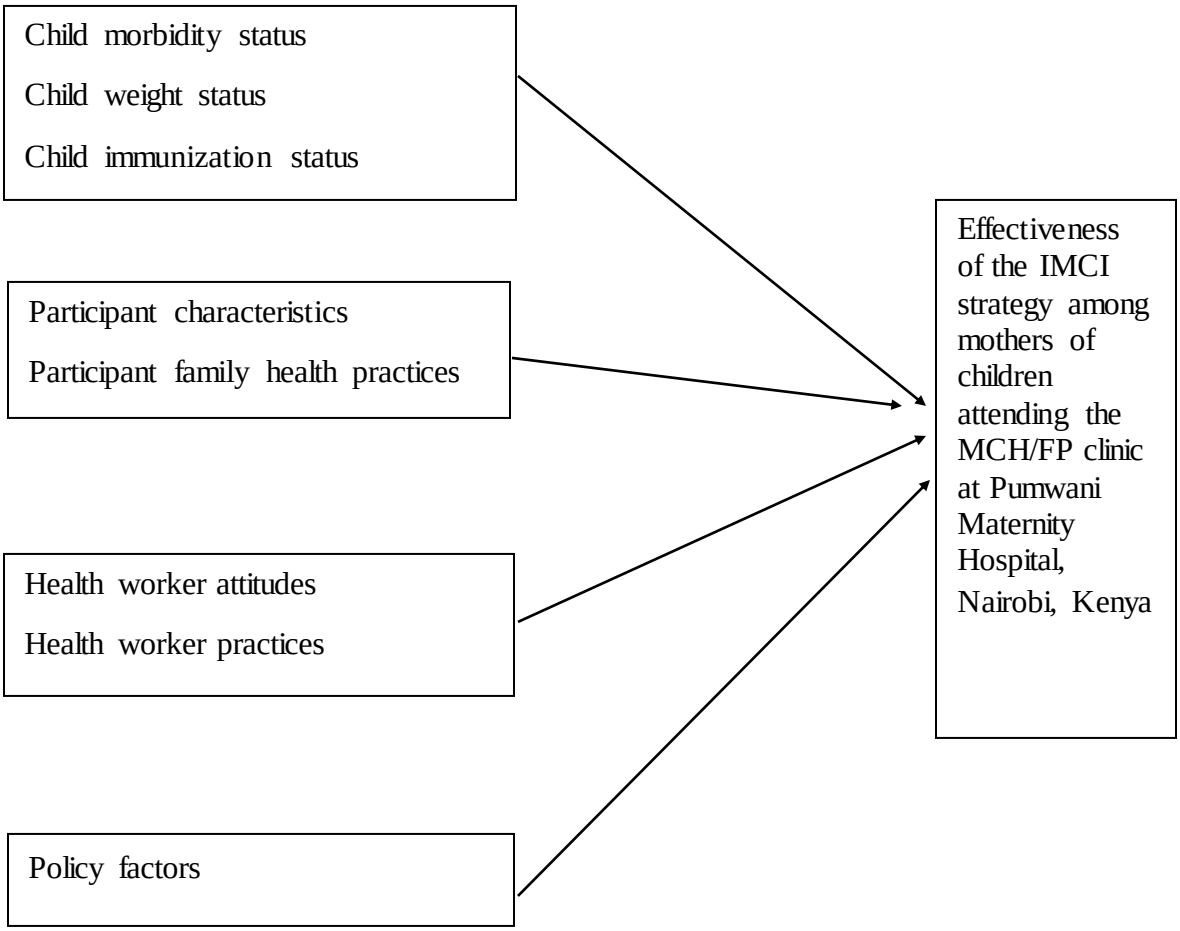
1.5.1 Main objective

To determine the factors influencing the effectiveness of IMCI among mothers of children at the MCH/FP clinic at Pumwani Maternity Hospital.

1.5.2 Specific objective

1. To determine child morbidity, weight and immunization status of the children attending the MCH/FP clinic at Pumwani Maternity Hospital.
2. To identify the participant characteristics and health practices influencing the effectiveness of IMCI among mothers of children attending the MCH/FP clinic at Pumwani Maternity Hospital.
3. To assess the health worker attitudes and practices influencing the effectiveness of IMCI among mothers of children attending the MCH/FP clinic at Pumwani Maternity Hospital.
4. To assess the policy factors influencing the effectiveness of IMCI among mothers of children attending the MCH/FP clinic at Pumwani Maternity Hospital.

1.6 Conceptual framework



CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Background

The IMCI strategy has 3 components: improving case management skills, improving health care delivery system and community IMCI. In order for the strategy to be successful in reducing child mortality and morbidity, all 3 components have to be implemented successfully and adhere to the set guidelines. The implementation cuts across healthcare workers, the health delivery system and the care givers and community. There are factors influencing the effectiveness of the strategy at each of these levels.

2.2 Child health status

According to the UNICEF (2013) Kenya statistics, there were 16.1% underweight children, immunization coverage was 83%, pneumonia care seeking was at 55.9% and diarrhoea treatment at 38.8%. With IMCI already in place, these statistics show that there are factors influencing its effectiveness. Using the morbidity, weight and immunization status of the children at the MCH/FP clinic at Pumwani Maternity Hospital, this study will show how effective IMCI is within the facility.

2.3 Caregiver characteristics and family health practices

A study done by Olufuneke (2009) in South-West Nigeria found more children under 6 months (66.7%) from the IMCI compliant Local Government Area (LGA) were exclusively breastfed than the same age group (25%) from the IMCI non-compliant LGA ($p = 0.037$). A similar trend was observed in children aged 12–23 and 20–23 months. The Vitamin A supplementation rate in children aged 6–59 months was higher in the compliant than in the non-compliant LGA. More children from the non-compliant LGA had diarrhoea and cough two weeks preceding the study ($p = 0.014$ and $p = 0.000$ respectively). However, during the same period more children from the compliant LGA had fever. More children from the non-compliant LGA had low weights for their ages. For all the age groups there were more 'low weight for age' children from the non-compliant than the compliant LGA. More caregivers

(78.5%) from the compliant LGA than those (30.5%) from the non-compliant LGA obtained information about home management of childhood illnesses from community based workers (p = 0.000).

Jibo *et al.* (2014) found that the adoption of IMCI key household and community practices was generally better in IMCI-implementing communities than in non-IMCI communities. Exclusive breastfeeding (EBF) rate among children under 6 months was higher in IMCI communities than in non-IMCI communities (p= 0.05) and non-IMCI communities also had a greater proportion of low weight-for-age children (42.5%) than IMCI communities.

In a study done by Mukunya *et al.* (2014) in Northern Uganda, it was found that the percentage of caretakers who had adequate knowledge on c-IMCI (basic knowledge within each pillar) was 13%. The prevalence of wasting and stunting were 8% and 21%, respectively. Caretakers' lack of knowledge of c-IMCI was associated with both wasting (OR 24.5, 95% CI 4.2-143.3) and stunting (OR 4.0, 95% CI 1.3-12.4). Rural residence was also associated with both wasting (OR = 3.1, 95% CI 1.5-6.5) and stunting (OR = 1.7, 95% CI 1.0-2.7). Children younger than 25 months were more likely to be wasted (OR = 3.3, 95% CI 1.7-10.0).

A case-control study was carried out in Gambia to assess the access to health care and mortality of children under 5 years of age and it showed that a rural place of residence was significantly associated with an increased risk of death before the age of 5 years, but no other traditional measure of access to health care retained statistical significance. However, 10 additional, non-traditional variables, including indicators of social support for the primary caregiver, his/her degree of financial autonomy and his/her source of revenue for health-care expenses, were significantly associated with child death (Rutherford *et al.*, 2009). As seen in the above studies, the individual characteristics and family health practices will influence the effectiveness of the IMCI strategy.

2.4 Health worker attitudes and practices

A study done in Tanzania by Idindili *et al.* (2018) found that caregivers had limited awareness of danger signs and symptoms of childhood illnesses. This study also found that

all health facilities that were visited had adequate supply of IMCI equipment. However, there was inadequate availability and distribution of clinical officers in the districts. None of the 41 clinical officers observed, assessed sick children for all items in the IMCI checklist. Furthermore, health centres and dispensaries were found to have a serious shortage of essential medicines. There are gaps in health seeking behaviour and health sytems affecting the effectiveness of the IMCI strategy.

2.5 Policy factors

In 2017, Pandya, Slemming and Saloojee in a South African province, found health system factors affecting implementation of Integrated Management of Childhood Illness to be poor adherence of the IMCI strategy, omission of aspects of the consultation, lack of clarity about what constituted an IMCI consultation, and poor recording of the consultation. In the human resourse aspect, themes that emerged were insufficient staff numbers, inappropriate staff allocation and rotation, and difficulties in maintaining competency. Health supplies and equipment was not reported as a significant barrier to IMCI implementation, although temporary stock-outs were reported from facilities in both districts. Non-availability of equipment such as mid upper arm circumference tapes and length mats/boards reportedly impacted growth monitoring and malnutrition assessment activities. On leadership and governance, themes that emerged were fragmented/vertical governance structures and lack of accountability among key stakeholders.

In Northeast-Brazil, Joao *et al.* (2004) found that health workers who had received training in IMCI performed significantly better than those who had not received training in IMCI. Communication with the caretaker improved significantly if the health worker had received training in IMCI. Significantly more caretakers were advised to give extra fluid to a sick child, advised on how to give oral medication, and advised on when to return to the facility immediately if seen by a health worker trained in IMCI compared to a non-IMCI trained health worker. Supervision in the facilities included in this survey was generally poor. Among all facilities in which health workers had received training in IMCI, only 19% (9/48) had received at least one supervisory visit. The study also found that health facilities that were included in this survey had a good supply of essential oral drugs (a score of 1.0 was given to facilities with all essential drugs), with the index being significantly higher in

facilities in which IMCI had been introduced compared to facilities in which IMCI had not yet been introduced. The availability of all essential equipment and material was also generally low, but significantly higher (56%) in facilities with IMCI than in facilities with no IMCI.

Tanzania was one of the countries included in a Multi-Country Evaluation (MCE) of IMCI, coordinated by WHO in 1999-2002. The MCE found that IMCI improved quality of care for children under 5 years of age, reduced child mortality by 13% and was cost-effective. However, a decade after the introduction of IMCI in Tanzania, several challenges have emerged and training of health workers remains the main activity implemented.The Ifakara Health Institute conducted a qualitative case study to investigate the IMCI implementation process at different levels of the health system. A good performing district (Bunda) and less well performing district (Tarime) were picked to investigate implementation experiences at district and facility levels. Challenges that were brought forward from the study included: low training coverage and poor adherence to the IMCI protocol (CREHS, 2009). Gaps in the implementation policy of the IMCI strategy will influence its effectiveness.

CHAPTER THREE

3.0 MATERIALS AND METHODS

3.1 Study site

The study was done at the MCH/ FP clinic at Pumwani Maternity Hospital in Nairobi between April and August 2012.

The hospital is located in the east side of Nairobi in Kamukunji sub county, Pumwani ward and is surrounded by the low-income residential areas of Eastleigh, Kariokor, Muthurwa, and Majengo. It was established by Nairobi City Council and begun operations in 1926. The hospital is currently run by the Nairobi City County Government. The MCH/FP clinic at the hospital attends to an average of 315 mothers and their children every month. The clinic has an average of 17 health workers of different cadres including clinical staff, counselors and nutritionists at any one time attending to the mothers.

3.2 Study design

A cross-sectional study was done to determine the factors influencing the effectiveness of IMCI among mothers of children in the MCH/FP clinic at Pumwani Maternity Hospital.

3.3 Study population

The population for the study were mothers of children at the MCH/FP clinic at Pumwani Maternity Hospital.

3.3.1 Inclusion criteria

All mothers of children who were at the MCH/FP clinic and were willing to participate, give written consent (appendix 6,7,8,9,10) and answer questions personally during the period of study.

3.3.2 Exclusion criteria

The mothers of children and health workers at the MCH/FP clinic who were not willing to participate in the study

3.4 Sample size calculation

For quantitative data collection, sample size estimation formula:

$$n = \frac{Z^2_{1-\alpha/2}\, pq}{d^2}$$ (Fishers, Andrew & Townsend, 1998)

n = desired minimal sample size (when population is greater than 10,000)

α = Level of significance (0.05)

$Z_{1-\alpha/2}$ = Standard normal deviate which is equal to 1.96 which corresponds to 95% confidence level.

P = the uptake of the IMCI strategy is not known, therefore 0.50 will be used.

q = 1 – P (0.50)

d = Degree of accuracy desired for the study at 95% confidence level this (0.05)

$$\text{n (sample size)} = \frac{(1.96)^2 \times (0.50 \times (1-0.05))}{(0.05)^2}$$

$$\text{n (sample size)} = \frac{3.8416 \times 0.25}{0.0025}$$

n= 384 mothers

For qualitative data collection, a 3 health workers heading different departments at the clinic were chosen for the Key Informant Interviews and 2 groups of 10 and 11 mothers were recruited to participate in the Focused Group Discussions.

3.5 Sampling procedure

For quantitative data, a systematic sampling procedure was used where every 3rd mother attending the MCH/FP clinic was selected as a participant.

$$\text{Sampling interval} = \frac{\text{Estimated sampling frame (N)}}{\text{Required sample size (n)}}$$

$$= \frac{1260 \text{ (mothers attending the clinic in 4 months)}}{384}$$

$$= 3$$

This eliminated bias in participant selection by ensuring that all the mothers had an equal chance of participating in the study.

For qualitative data, a purposive sampling procedure, where available and willing mothers were selected until the required sample size was attained for the Focus Group Discussions.

3.6 Data collection methods

Data collection of quantitative data, that is, participant characteristics and family health practices which included feeding practices, disease prevention practices, home based care practices and care seeking practices was done using a structured questionnaire (appendix 1) in English or in Swahili (appendix 2). The identified mothers of children attending the MCH/FP clinic were approached by the data collector and were explained to the purpose of the study. Once the mother agreed to participate, they were taken through the consent form and upon signing the form, the interview began using the questionnaire. The questionnaire was used as part of normal clinic procedure.

Qualitative data was collected through both KIIs and FGDs. Key Informant Interviews (KII) guides (appendix 5) were used on the health workers and a Focus Group Discussion guide (appendix 3 and 4) was used on mothers. Three heads of department were identified to participate in the Key Informant Interviews. After

identification, they were taken though the purpose of the study. The data collector then discussed informed consent which included tape recording consent. The interview, using the KII guide, began after written consent was signed. Two FGDs were conducted. Around 10 mothers were identified using purposive sampling method. Each mother was informed of the purpose of the study and upon signing the written consent form, were recruited into the discussion group. The focused discussions were then held using the FGD guide. The principal investigator performed all the interviews and moderated the group discusions A tape recorder was used to record what was said by the participants. All interviews and discussions were conducted after written informed consent (appendix 8, 9 and 10) was obtained from the participants.

3.7 Data management and analysis

3.7.1 Data entry

Quantitative data from the field was coded and double entered into a computer database designed using MS-Access version 10 application. Data cleaning and validation was performed in order to achieve a clean dataset that was then exported into an IBM Statistical Package format (SPSS) version 23 ready for analysis.

Qualitative data in form of tape recorded material were transcribed and stored in MS Word version 10. Data cleaning and validation was performed in order to achieve clean data

3.7.2 Data storage

Back up files were stored in flash discs. This was done regularly to avoid any loss or tampering. All the questionnaires and interview forms were stored in a lockable drawer for confidentiality.

3.7.3 Data analysis

Data analysis was conducted using IBM SPSS version 23 statistical software. Exploratory data techniques was used at the initial stage of analysis to uncover the structure of data and identify outliers or unusual entered values.

3.7.3.1 Univariate analysis: Descriptive statistics such as proportions was used to summarize categorical variables such us respondent's residence while measures of central tendency such as means, standard deviations and ranges for continuous variables like age.

3.7.3.2 Bivariate analysis: Pearson's Chi-square test was used to test for the strength of association between categorical variables. All independent variables (participant characteristics and family health practices) were associated with the dependent variable (child morbidity, weight and immunization status) to determine which ones had significant association. Odds Ratio (OR) and 95% Confidence Interval (CI) was used to estimate the strength of association between independent variables and the dependent variable. The threshold for statistical significance was set at $\alpha = 0.05$ and 95% confidence intervals (CI) reported for corresponding analysis.

3.7.3.3 Multivariate Analysis: All independent variables identified to significantly associate with the dependant variables at bivariate analysis were considered together in a multivariate analysis. This was performed using Binary logistic regression where backward conditional method was specified in order to eliminate confounders and effect modifiers. Adjusted odds Ratios (AOR) together with their respective 95% Confidence Interval (CI) were used to estimate the strength of association at P=0.05, between the retained independent predictors of 'IMCI effectiveness'.

Qualitative data was analysed using content analysis method. The transcription of notes was done immediately after the interview with the audiotape used to fill in any gaps that arose. The data was then organized into major themes including health worker knowledge, attitude and practices, training, health facility support by the Governement and Community IMCI.

3.8 Research variables:

3.8.1 Dependent variables: child morbidity, child weight and child immunization status

- **Child morbidity status** – any illness the child had during the clinic visit including acute upper repiratory tract infection, diarrhea and fever.
- **Child weight status** - the weight of the child during the visit to the clinic. The child was weighed and weight was recorded in a weight chart in the child's clinic card. The chart has curves that show weight ranges with an upper 95^{th} percentile, the 50^{th} npercentile and the lower 5^{th} percentile. The weight status of the child was then determined by where the weight of the child falls within these curves. The child was either under weight, normal weight or over weight.

- **Child immunization status** – immunizations received by the child. The immunizations were those appropriate for the age of the child. In Kenya, the vaccination schedule is as follows:

* **BCG –** at birth
* **OPV –** at birth, 6 weeks, 10 weeks, and 14 weeks
* **DPT-HepB-Hip-** at 6 weeks, 10 weeks and 14 weeks
* **Measles –** at 9 months

3.8.2 Independent variables: participant characteristics and family health practices

- **Participant characteristics** - these include age, religion, marital status, education, occupation, type of housing.
- **Family health practices: -** these are the everyday health practices followed by the care giver. They were measured against the dependent variables. They incude:

  Nutrition practices – exclusive breastfeeding for 6 months, complrmentary feeding from six months while continuing to breastfeed up to 2 years or longer and providing children with adequate amounts of micronutrients (Vitamin A and iron).

  Disease prevention practices – safe/ appropriate stool disposal, hand washing practices with soap and ensuring that children sleep under insecticide treated nets in malaria endemic areas.

  Home based care practices - continue feeding and offer more fluids to children when they are sick and giving sick children appropriate home treatment for illness.

  Care seeking practices - taking children as scheduled to complete a full course of immunization, recognising when sick children need treatment outside the home and taking them for health care to the appropriate providers and following recommendations given by health workers in relation to treatment, follow-up and referral.

3.9 Ethical considerations

Ethical approval was sought from KEMRI for scientific clearance, as well as from the Ethics Review Committee (ERC). Permission to collect data was also sought from the medical superintendent of Pumwani Maternity Hospital.

The study was conducted at the MCH/FP clinic at Pumwani Maternity Hospital after the participants had been attended to by the health workers. The participation of the mothers and the health workers was on a voluntary basis.They had a right to refuse to participate or respond to any questions from the questionnaire that they felt uncomfortable with and were free to withdraw at anytime. A written informed consent (appendix 6,7,8,9,10) was sought from all the participants either by having it explained to them verbally or personally reading it before the interview and thereafter, signing it. No mother was recruited specifically for the study but rather the study was conducted as part of the normal clinic attendance. The questionnaire, KII guide and FGD guide were designed in order to meet the purpose and objectives of the study.

The benefits of the study to the participants included reiteration of the ideal family practices and knowledge in prevention of common childhood illnesses and identifying any knowledge gaps in their current daily practices and reminding them of the ideal. There were no potential risks or harm anticipated to the participants, but in case a participant felt embarrassed, they could withdraw at any time or if they got psychological trauma due to the questions, they were referred to a counselor at the ANC clinic.

Information obtained from the participants was kept confidential. There was no way of identifying the participants and their responses because the names of participants were withheld and all participants were allocated unique identifiers. The questionnaires and audiotapes were kept in a lockable cabinet at a designated room in the clinic. The key was kept by the principal investigator. Computer documents had passwords only accessible to the research team only.

CHAPTER FOUR

4.0 RESULTS

The study was carried out at the MCH/FP clinic at Pumwani Maternity Hospital in Nairobi between April and August 2012. The results show that there are some socio demographic characteristics as well as family health practices influencing the effectiveness of the IMCI strategy among the mothers. There are also health worker attaitudes, practices and policy factors that influence the effectiveness of the IMCI strategy.

4.1 Participant characteristics of mothers of children attending the MCH/FP clinic

Table 4.1 below shows participant caracteristics of the mothers of children attending the MCH/ FP clinic. From the results, 97.7% of the participants reside paermanently in Nairobi while 97.1% are Christians. Only 7.8% have are employed while 81.8% have a partner or spouse.

Table 4. 1 Participant characteritics of mothers of children attending the MCH/FP clinic

Variable	Frequency (n)	Percentage (%)
Reside in Nairobi	377	97.9
Christian religion	374	97.1
Age (21-30)	278	72.2
Secondary level education	203	52.7
Reading newspapers less than once a week	157	40.8
Listening to radio once a week	197	51.2
Watching television almost everyday	201	52.2
Working	30	7.8
Respondents with a spouce/ partner	315	81.8
Respondent's spouce age (26-30)	146	46.3
Spouce/ partner secondary level of education	226	71.3
Joint child health issues decision making	300	78.7
Number of people in household between 3 - 5	325	84.9
Main water source piped into house	362	94.3
Water purification being done	382	99.2
Pit latrine toilet facility for household	208	54
Sharing toilet facility with other households	219	56.9
No separate cooking room	214	55.7
Cement for house floor material	311	80.8
Corrugated iron for house roof material	195	50.8
Stone for house wall material	338	84.7
Getting child health information from a health worker	270	52.7
Electricity availability	384	99.7

4.2 Participant characteristics of the children at the MCH/FP clinic.

The mean weight of the children in the study was 5.698 kgs while the average age was 5 months, as seen in table 4.2 below.

Table 4. 2 Age and weight distribution of children attending the MCH/FP clinic

	Frequency	Min	Max	Mean
Age(month)	385	0.25	36	5.0721
Weight(kg)	385	1.9	17	5.698

4.3 Child morbidity, weight and immunization status at the MCH/FP clinic.

The effectiveness of IMCI among mothers of children attending the MCH/FP clinic at Pumwani Maternity Hospital was measured using the variables: child morbidity status, child weight status and child immunization status. The study found that there were 21.6% unwell children, 25.7% were underweight while 11.5% had not bee fully immunized for age. Table 4.3 below summarizes the findings.

Table 4. 3 Child morbidity, weight and immunization status at the MCH/FP clinic.

Variable	Frequency (n)	Percentage (%)
Morbidity		
Well	302	78.4
unwell	83	21.6
Weight		
Normalweight	286	74.3
Underweight	99	25.7
Immunization		
Fully immunized	341	88.5
Not fully immunized	44	11.5

4.4 Family health practices of mothers of children attending the MCH/FP clinic.

The family health practices of mothers attending the MCH/ FP clinic in Pumwani Maternity Hospital are summarized in table 4.4 below. The results show that 40.1% of the mothers practices exclusive breastfeeding while 97% started complementary feeding at 6 – 9 months. Also, while 93% had received Vit. A supplementation, only 26.4% had received iron supplements. Handwashing was highest before feeding a child and only 49.5% were aware that ORS is used in diarhoea.

Table 4. 4 Family health practices of mothers of children attending the MCH/FP clinic.

Variable	Frequency (n)	Percentage (%)
Exclusively breastfed for 4 months	160	40.1
Currently breast feeding	202	50.6
Complementary feeding at 6 – 9 months	128	97
Vitamin A supplementation	136	93
Iron supplementation	101	26.4
Hand washing everytime after toilet visit	341	88.6
Hand washing everytime before meal preparation	328	85.2
Hand washing everytime before child feeding	359	93.2
Child sleeping under the ITN everyday	347	90.4
Child has previous diarrhea experience	159	41.3
Fluid amount given same as usual during diarrhea	83	52.2
Food amount given same as usual during diarrhea	78	49.1
Child has previous fever experience	319	82.9
Fluid amount given same as usual during fever	185	58.2
Food amount given same as usual during fever	220	69.6
Child has previous cough experience	51	13.3
Fluid amount given less than usual during cough	29	56.9
Food amount given same as usual during cough	27	52.9
Public facility visited to treat diarrhea	58	63
Public facility visited to treat fever	125	53
Public facility visited to treat cough	24	61.5
Fever/ shivering as a sign to seek treatment for child	285	86.6
ORS awareness for diarrhoea	190	49.5

4.5 Child morbidity, weight and immunization status in relation to participant characteristics and family health practices of mothers attending the MCH/FP clinic.

Bivariate Analysis was done using Pearson's Chi-square to test for the strength of association between categorical variables. All independent variables (participant characteristics and family health practices) were associated with the dependent variables (child morbidity, weight and immunization status) to determine which ones had significant association. Odds Ratio (OR) and 95% Confidence Interval (CI) were used to estimate the strength of association between independent variables and the dependent variables. The threshold for statistical significance was set at $p<0.05$. The factors that were found to be significantly associated with child morbidity, weight and immunization status are summarised in tables 4.5, 4.6 and 4.7 below. From the findings, participant characteristics and family health practices that showed statistical significance with child weight status included complementary feeding at 6 – 9 months and iron supplementation.

Table 4. 5 Child weight status in relation to participant characteristics and family health practices of mothers attending the MCH/FP clinic.

Variables	Child underweight		Child normal weight		OR	CI	P value
	n	%	n	%			
Respondent works							
Yes	2	6.7	28	93.3	Ref		
No	97	27.3	258	72.7	0.190	0.044 - 0.813	0.013
Complementary feeding from 6 – 9 months							
Yes	15	11.7	113	88.3			
No	2	50	2	50			0.000
N/A	81	67.9	171	67.9			
Iron supplementation							
Yes	17	16.8	84	83.2	Ref		
No	80	28.4	202	71.6	0.511	0.286-0.915	0.022
Child had a previous diarrhea experience							
Yes	32	20.1	127	79.9	Ref		
No	57	29.6	159	70.4	0.598	0.369-0.968	0.035
Child had a previous fever experience							
Yes	73	22.9	246	77.1	Ref.		
No	26	39.4	40	60.6	0.457	0.262-0.798	0.005
Child had a previous cough experience							
Yes	5	9.8	46	90.2	Ref.		
No	94	28.2	239	71.8	0.276	0.107-0.717	0.005
Respondent seeked treatment for fever							
Yes	46	19.7	188	80.3	Ref.		
No	27	31.4	59	68.6	0.535	0.306-0.934	0.027

The results in table 4.6 below show that living in Nairobi and both Vit. A and iron supplementation have statistical significance with child immunization status.

Table 4. 6 Child immunization status in relation to participant characteristics and family health practices of mothers attending the MCH/FP clinic.

	Child not fully immunized		Child fully immunized		OR	CI	P value
	n	%	n	%			
Resides in Nairobi							
Yes	39	10.3	338	89.7	Ref.		
No	5	62.5	3	37.5	0.069	0.016-0.321	<0.0001
Iron supplementation							
Yes	6	5.9	95	94.1	Ref.		
No	38	13.5	244	86.5	0.406	0.166-0.991	0.042
House wall material							
Cardboard	2	50	2	50			0.021
Wood	8	19.5	33	80.5			
Stone	33	9.8	305	90.2			
Other	43	11.2	341	88.8			
Complementary feeding at 6 – 9 months							
Yes	2	1.6	126	98.4			<0.0001
No	0	0	4	100			
N/A	42	16.7	210	83.3			
Vitamin A supplementation							
Yes	4	2.9	132	97.1			<0.0001
No	1	10	9	90			
N/A	39	16.3	200	83.7			

Table 4.7 below highlights the respondents' religion and previous illness experiences of the children as showing statisctical significance with child morbidity status.

Table 4. 7 Child morbidity status in relation to participant characteristics and family health practices of mothers attending the MCH/FP clinic.

	Child unwell		Child well		OR	CI	P value
	n	%	n	%			
Respondent religion							
Christian	77	20.6	297	79.4	Ref.		
Muslim	6	54.5	5	45.5	0.216	0.064-0.727	0.007
Child had previous diarrhea experience							
Yes	45	25.3	114	71.7	Ref.		
No	38	16.8	188	83.2	1.953	1.196-3.189	0.007
Child had previous fever experience							
Yes	79	24.8	240	75.2	Ref.		
No	4	6.1	62	93.9	5.105	1.799-14.472	0.001
Child had previous cough expirience							
Yes	20	39.2	31	60.8	Ref.		
No	62	18.6	271	81.4	2.820	1.508-5.275	0.001
Respondent seeked treatment for diarrhea							
Yes	33	35,5	60	64.5	Ref.		
No	15	20.3	59	79.7	2.163	1.065-4.393	0.031

4.6 Factors influencing the effectiveness of IMCI among mothers of children attending the MCH/FP clinic.

All independent variables identified to significantly associate with child morbidity, weight and immunization status at bivariate analysis were considered together in a multivariate analysis. This was performed using binary logistic regression where backward conditional method was specified in order to identify confounders and/or effect modifiers. Adjusted odds Ratio (AOR) with corresponding 95% Confidence Interval (CI) were used to estimate the strength of association between the retained independent predictors. The factors influencing the effectiveness of IMCI are summarized in table 4.8 below. The results show that religion, area of residence and complementary feeding practices do influence the effectiveness of IMCI among mothers at the MCH/FP clinic.

Table 4. 8 Factors influencing the effectiveness of IMCI among mothers of children at the MCH/FP clinic.

		95% Confidence interval		
Predictors	**AOR**	**Upper limit**	**Lower limit**	**P value**
Religion				
Christian	7.108	1.180	42.821	0.032
Muslim	Ref.			
Respondent's residence				
Nairobi	15.889	2.751	91.785	0.002
Out of Nairobi	Ref.			
Complementary feeding at 6 – 9 months				
Started	10.953	1.311	91.490	0.027
Did not start	Ref.			

4.7 Health worker attitudes and practices that influence effectiveness of IMCI among mothers of children attending the MCH/FP clinic.

4.7.1 Knowledge

4.7.1.1 Basic definition

A majority of the study respondents did not know the basic definition of IMCI. This is as captured in the responses below:

"*About managing the common diseases like the pneumonia, the malaria, (is) the common that happens in health centers*." (HW1)

"*IMCI, I understand is integrated, what? Managing the babies. I know it deals with the approach on how you handle emergencies regarding babies*." (HW3)

4.7.1.2 Strategy application

However, all the health workers were aware of the strategy's application in childhood illnesses and welfare, as indicaed in the statement below,

'*It involves the management of childhood illnesses. How you manage like growth monitoring, treatment of illnesses. I would include immunization, food supplementation because it's a management of the malnutrition*.' (HW1)

4.7.2 Attitude and Perception

4.7.2.1 Case management skills

Majority of the health workers confirmed that they believed that the strategy has improved their case management skills. Some responses include;

"*Yes. Because we are able to identify a baby out there without a stethoscope, I will be able to tell you that this child has pneumonia*." (HW2)

"*Yes. It's a simplified tool, I have gone through it. It simplifies it*." (HW3)

"*Yes. It reduces the 'hit and miss.' You know what you are looking for if a child maybe has diarrhea or vomiting, before you can be able to classify and you're able to intervene*." (HW6)

4.7.2.2 Care givers' knowledge

In this study however, a majority of the respondents do not believe that the community component is working and that the care givers are knowledgeable in the IMCI family practices. This is seen from the responses below;

"*No. They know absolutely nothing. We teach them about feeding, if a child is dehydrated what they should start with, no, I don't think they know anything.*" (HW1)

"Unajijazia, nikiwa naenda huko hawafundishani, unamaliza tuu unaeenda." *(You just figure it out yourself, when I go there (clinic), they don't teach, you just finish and go)* (Respondent3 FGD1)

4.7.2.3 Effectiveness of the strategy

Most of the health workers believe that the IMCI strategy has reduced child morbidity and mortality rates and some go further to advocate for further training and implementation as below;

"....It has an impact particularly in breastfeeding" (HW3)

"In Pumwani, it does. And the more we get people being trained, the more mortalities reduce and morbidities…" (HW2)

4.7.3 Practice

4.7.3.1 Adherence to strategy in daily practice

There were mixed responses on whether the health workers followed all steps in the case management guidelines of the IMCI strategy. As indicated in the following statement;

"*Yes, I believe I follow most of the steps. In cases of diarrhea, classification of dehydration, treatment of shock, cases of bronchopneumonia, malnutrition I hardly see, most of them we follow the algorithm in the IMCI*." (HW1)

Some respondents said that they did not follow all steps in their daily practice due to work load, lack of training and job aids, as shown below;

"No. Sometimes the clinic gets overwhelming. I know there is a booklet on IMCI which we have to refer to, once you memorize a few aspects of it, the other aspects you don't really have to look for it in the book. Which means quite often you will miss some things, you really don't have to follow." (HW3)

4.7.3.2 Information dissemination

The mothers at the clinic do believe that they get a lot of information from the health care workers as seen in the statements below;

"*When I went to the clinic for the first time, we were told about breastfeeding for 6 months. We were told it's (breastfeeding)100% in everything and that we should not give the baby*

anything else for 6 months and it contains everything, protein, vitamins, everything" (Respondent11, FGD1)

"*We were taught here in the clinic, when we would come, when you are breastfeeding, you should play with the baby*." (Respondent5, FGD1)

"*I was explained (HIV/AIDS prevention and care for sick) to by the doctor when I started coming to the clinic*" (Respondent8, FDG2)

However, there were gaps in some aspects of family practices in information dissemination by the health workers. The care givers had never received any information on some of the family practices and therefore either had no idea or used their innate common sense in their daily routines of the same. These include:

- Micronutrient issuing (Vitamin A and Iron)
  "Amepewa lakini huuambiwi ni gani, wanawekanga tu huambiwi ni gani" (The child has been given but you are not told which, they just give and don't tell you) (Respondent8, FGD1)
- Feacal disposal and handwashing
  "My mum told me about it, I tie the diaper then I put in a paper and dispose it in the dustbin then I wash my hands". (Respondent4, FGD2)
- Insecticide Treated Nets (ITNs) to protect children
  "Kwa T.V, wakielezea" (watched on TV, they explain). (Respondent1, FGD1)
- Home care of a sick child
  "Tunamweka akiwa warm, akiwa na homa unamvalisha nguo warm". (We keep him warm, when he has a cold, we dress him in warm clothes" (Respondent3, FGD2)
- Avoid abuse and neglect of children and action taken if it occurs
  "Tuseme ni mama unaweza mwongelesha kama itakuwa unaona inaendelea unaweza mreport". (Let's say it's the mother, you can talk to her first, if you see that it is continuing, you can report her). (Respondent9, FGD1)
- Ensuring active participation of men in child care and family reproductive health issues
  "Akitoka kazi lazima ambebe yaani amuonyeshe mapenzi kidogo". (When he leaves work, he has to carry the child to show her that he loves her). (Respondent11, FGD2)

- Prevention of child injuries and accidents

  "Huyu wangu anajaribu kama kuamka hivi, nikimweka kwa kiti hata kuna siku moja aliianguka, sasa vile alianguka nikamsugua hakufura sana lakini nilienda akaangaliwa, lakini aligongwa na meza coz alikuwa anajaribu kuamka. Sasa namweka kwa bed". (My child trys to get up when I place him on a chair, one day he fell down, then I rubbed the area, he did not swell but I went to a clinic so that he can be checked. He was hit by a table because he was trying to get up and walk but now I put him on the bed". (Respondent7, FGD1)

4.8 Policy factors that influence that influence effectiveness of IMCI among mothers of children attending the MCH/FP clinic.

4.8.1 Training

In this study, more than half of the health workers had not had specific training on the IMCI strategy. They stated;

"*No, apart from what I got from undergraduate and post-graduate I have not done the course*." (HW1)

"*I have been offered a training on IMCI but I 33idn't honor it. Late last year (because of the) schedule at work, it was 1 week and the rota at work, it was a short notice*." (HW3)

4.8.2 Health facility support by the Government

4.8.2.1 Job Aids

The findings were:

4.8.2.1.1 Charts

Almost all the respondents had not come across the job aids in the facility. This is evidenced by the following statements from the respondents:

"*I have not seen any charts or job aids but we have the book that we usually refer to. Because they are lying somewhere in ministry of health or in the division of prevention of …*" (HW3)

"*I have seen the charts but they are not user friendly. For someone to use them fully, you need at least 30 minutes per patient. With our workload, the clinician or the person seeing the patient won't do this*." (HW2)

4.8.2.1.2 Client booklets

A big majority of the care givers at the clinic did have booklets issued at the clinic, as shown in the following responses:

"…it's written in our booklets, if you read, you see a picture of a net with the importance of using a net…" (Respondent6, FGD1)

"*Yes, it's (promotion of the mental and social child development through talking and playing) important, the doctor told me and I also read it in the booklet that we were given*" (Respondent1, FGD2)

4.8.2.1.3 Medical equipment

Majority of the health workers believed that there was adequate medical equipment support from the government, but there is always room for improvement. For this they stated that:

"*Medical equipment? Ofcourse we would like more support. But IMCI, what you need for IMCI is very basic. You probably need syringes, IV line, Septrin, yeah we have*." (HW2)

"*Medical equipment, like stethoscopes, weighing scales, weighing scales are there, stethoscope is there. The equipment is there.*" (HW3)

4.8.2.1.4 Medical drugs

In the study, most of the respondents felt there was adequate support concerning the medical drugs available at the facility clinic, with room for improvement but quite satisfactory, stating that:

"*The drugs are there….*" (HW1)

"*Sometimes some of them (drugs) we can't access but at least we have….*" (HW3)

4.8.2.1.5 Supervision

Majority of the health workers felt that there was inadequate supervision from external sources, including the national level. They stated:

"*No, not at all, never*." (HW2)

"*From external sources, no I haven't seen that*." (HW3)

4.8.3 Community IMCI component

The health workers were evenly divided on the awareness and the availability of community health workers. Majority of the respondents were not aware of any government support towards the community health workers with views being that they are volunteers, paid by NGOs while others were not aware of any support at all. Their comments were:

"*No, I know talks are given, but to the community, from Pumwani? No no no. Government support? For our set up? Maybe other set ups out there, let me not overlook it, maybe its*

working but for our set up here, we still get clients who have the same issues of feeding. Issues that make you wonder do we really have someone out there to convey the information to them." (HW3)

"*Yes they are there but we are hoping and praying that the community worker strategic plan will be implemented whereby now we stop relying on volunteers, but we have people who have been put on pay, they are motivated and that way we are sure it's going to work or going to be implemented*." (HW1)

CHAPTER FIVE

5.0 DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.1 Discussion

5.1.1 Child morbidity, weight and immunization status of the children attending the MCH/FP clinic.

Although 78.4% of the children were well on the day of visit, about 21.6% had various ailments, showing that the disease prevention practices of the IMCI strategy are not being followed completely. A lack of knowledge on disease prevention practices of the caregivers is evident. The IMCI protocol allows for the health care worker to impart disease prevention knowledge to the caregivers to minimise the incidences of illness. The findings are lower than Patnaik, Patnaik, Kumar and Sahu (2012) who observed that 47.58% of children were suffering from some form of morbidity.

The study measured the weight status of the children at the MCH/FP clinic. The results showed that about a quarter of the children were underweight, showing a major gap in the feeding practices in this population. The health workers and community health workers, using the IMCI protocol should be able to counsel the mothers on better feeding practices, improving this outcome. The result is higher than the KDHS 2008/09 report where 16% of children under five were underweight (low weight-for-age) and 4% were severely underweight. It is also higher than Olack *et al*. (2011) who found that the prevalence of underweight (low weight-for-age) was 11.8%.

The study measured appropriate for age immunization status of the children. Majority, 89% of the children in the study were found to be fully immunized while only 11% were not fully immunized. This result shows that vaccine coverage is good but still not 100%. Vaccination provides immunity to children against morbidity and deaths caused through tuberculosis, diphtheria, pertussis, tetanus, polio and measles. IMCI advocates for vaccination of all children to prevent contracting and spreading these diseases. The findings are higher than those of Mutua, Kimani-Murage and Ettarh (2011) who found that up-to-date (UTD) coverage with all vaccinations at 12 months was 41.3% and 51.8% with and without the birth dose of OPV, respectively. Ibnouf, Van den Bourne and Maarse (2007) also found that approximately 75.1% of children under the age of five had been vaccinated correctly either

completely or had received the specific dose of vaccination for their age against one or more of the six killer diseases.

5.1.2 Participant characteristics and family health practices influencing the effectiveness of IMCI among mothers of children attending the MCH/FP clinic.

A majority of the respondents (97.9%) in the study reside in Nairobi while only 2.1% do not. This can be explained by the location of the study hospital which is in an urban setting, ensuring that most of the respondents live in Nairobi. Most of the respondents in this study were between the ages of 21 and 30 years. This shows a normally distributed sample population. The findings are in agreement with Maina, Karanja and Kombich (2012) who found that a majority of their participants (43.7%) were aged between 20 and 24 years and 29.7% were 25-29 years. Imbaya, Odhiambo-Otieno and Okello-Agina (2015) also did a study in Pumwani Maternity Hospital and found that the women at the ANC were aged 15 - 42 years (mean 28.3 years).

The study found that 97.1% of the respondents were Christians, 72.2% had attained secondary level education and 81.8% had spouses. These findings concur with Gitobu, Gichanga and Mwangi (2018) who found that of the mothers visiting Kenyan public health facilities, 89% were Christians, 72.7% were married and 24.3% of the mothers had completed secondary school education, making the study population comparable.

In this study, a majority of the respondents (93%), had households consisting of between 3 - 5 people. A large number of people living in a household is likely to affect the feeding practices and disease prevention practices in a home. This result is in agreement with the KDHS 2014 report which found that the mean size of a Kenyan household is 3.9 persons, however, rural households are larger on average (4.4 persons) than urban households (3.2). Smaller sized households have less familial risk of child deaths as reported by Keraka (2012). Majority (99.2%) of the respondents in this study were purifying their water to make it clean for consumption and use. To prevent water borne diseases, water needs to be purified before use. This is a good disease prevention practice by the households. The findings of the study are not in agreement with the KDHS 2014 report which shows that over half of households (54 %) do not treat their drinking water, and this is true in both urban and rural areas. The big differences in the water treatment practices can be attributed to urbanization hense better information dissemination on better practices. The study also found that quite a large number

of the respondents used charcoal (56.1%) as cooking fuel. Cooking fuel is an important household characteristic as it can cause respiratory illnesses due to the constant inhalation. The KDHS 2014 found that cooking fuel in the urban areas consisted of a majority using charcoal (27%). This agrees with the study on the popularity of the cooking fuel and it can be attributed to the study area and also the economic status of the respondents.

In this study, exposure to media was assessed by asking how often a respondent reads a newspaper, watches television, or listens to a radio. The findings were, 52.2% of the respondents watch television every day, 51.2% listen to the radio at least once a week and 33% read a newspapers once a week. Access to all three forms of mass media was high among the paricipants implying that health messages can effectively be passed through these channels. This trend was very similar to the findings of the KDHS 2014 survey, where urban women have more access to all forms of mass media compared with their rural counterparts. Around 66% of women in urban areas watch television at least once a week and 25% read newspaers. In the study, child health information was mostly acquired from health care workers. A majority (70.1%) of the respondents confirmed that most of the child health information they have, was acquired from health care workers that they encountered at the health facility while others got the information from the radio, television, newspaper and billboards. Health care workers are a very essential link in knowledge acquisition by the public. Hence emphasis should be put in the health care worker training. These findings concur with Thompson and Harutyunyan (2008) who found that after IMCI implementation and campaigns, many respondents reported exposure to health messages within one month, with televised messages and/or direct contact with community health volunteers (47.3% and 44.9%, respectively) most often cited.

This study found that 94.3% had piped water into their houses, 54% used pit latrines, 56.9% shared the toilet facilities with other households and 99.7% had to electricity in their homes. This shows that the type of housing in this population is modern with adequate sanitation facilities allowing for proper disease prevention practices. According to Report of the Nairobi Cross-sectional Slums Survey (NCSS) 2012, household characteristics in the urban settings were, 27.6% households have piped water, 44% use pit latrine and 88.6% have electricity, concurring with the study.

Forty percent (40%) of respondents in this study were or had exclusively breast fed up to 4 months while 97% introduced complementary feeding between 6 – 9 months. Proper feeding practices are essential in the health of a child. Malnutrition is an underlying cause in child morbidity and mortality. Most participants in this study were not practicing exclusive breastfeeding which can cause child weight and health problems. The results are not in agreement with Yeshalem, Tadese and Dereje (2017), who found that the prevalence of exclusive breastfeeding practice was 113 (84%) but however found complementary food introduction concurs with this study at 97.5%. Mbagaya (2009) also found that only 12.2% of the mothers practiced exclusive breastfeding up to 4 to 6 months. Mothers introduced liquids and complementary foods at a mean age of 2.7 months and by the fourth month, more than one-third (34.5%) of the mothers had initiated complementary feeding in Kakamega District, Western Kenya.

The study found that 88.6% of the respondents washed their hands after visiting the toilet, 85.2% before preparing meals and 93.2% before feeding their children. Sanitation is an important factor in disease prevention in childhood. These results show good family practices in the participants. The results are higher than Opara, Alex-Hart and Okari (2017) in Nigeria, who found that before feeding infants only 30.5% mothers washed their hands with soap and running water and also Begum and Bhavani (2016) in India, who found that only 41.3% mothers wash their hands before feeding the children and 44.7% before cooking. However, the results concur with Begum and Bhavani (2016) with 79.3% mothers who washed their hands with soap and water after defecation.

Majority (73.8%), of the respondents in this study were not giving iron supplements to their children, while only 26.2 % had given their children iron supplements. Micronutrient supplementation ensures proper health and growth of a child as well as more contact with a health care worker. This is a good practice within this population. The findings are synonymous with the KDHS 2014 survey data on iron supplementation indicating that it is generally low (5 percent) and does not vary substantially with background characteristics. The study also found that 93% of the children had received Vitamin A supplements which is higher than the coverage of 31.0% in a study done by Clohossey *et al.* (2013) in Kenya.

In this study, previous illness experiences of the respondent's children was as follows, 13.3% had cough, 82.9% had fever and 41.3% had diarrhea. This finding implys that IMCI effectiveness is not optimal in this population. Disease prevention practices are still lacking and need to be improved. In Hana and Abdulla (2013), the most commonly reported symptom in children was fever (76.89%), followed by cough (35.85%) then diarrhea (29.25%). This shows that fever is a very common symptom in childhood, however, cough and diarrhea, though common, may vary in occurrences.

Participants in this study perceived fever as a strong contender for care seeking for their children. IMCI should improve the care seeking behaviour of the mothers for all illnesses. These findings do not concur with Taffa and Chepngeno (2005), who found that caretakers sought medical care more frequently for diarrhea symptoms than for coughing and even more so when the diarrhea was associated with fever.

The aim of the study was to find the factors influencing the effectiveness of IMCI among mothers of children at the MCH/FP clinic. These factors would either increase or reduce the chances of a child being well, of normal weight or fully immunized. The study found that living in Nairobi was 15 times more likely for the respondents to have an appropriate-for-age fully immunized child. Proximity to health facilities, economic status, education and health information access in the urban setting could be the reason behind better immunization coverage This finding is in agreement with Ibnouf *et al.* (2007) who found that mothers of children from urban areas reported correct vaccination more than mothers of children in rural areas (79.2% and 35.9% respectively).

The study found that being of the Christian faith would infer the likelihood of having a well child seven times more compared than being of the Muslim faith. (95% CI 1.180-42.821; P=0.032). Proper and focused health information dissemination should be done in this demographic.

This study found that mothers who started complementary feeding at 6 – 9 months were 10 times more likely to have a fully immunized child compared to those who did not start complementary feeding at that time. This is probably due to the mothers' interaction with healthcare practitioners who teach and support complementary feeding. Telling caregivers about complementary feeding practices during immunisation is likely to encourage beneficial

complementary feeding practices. The result is in agreement with a study done by Mokori, Schofeldtb and Hendriksc (2017) in Uganda, concluding that caregivers who take their children for deworming, DPT3 and measles vaccinations are more likely to feed the children adequate diets, especially those aged 6 to 17 months.

5.1.3 Health worker attitudes and practices influencing the effectiveness of IMCI among mothers of children attending the MCH/FP clinic.

Majority of the workers had an understanding of the basic definition and the application of the IMCI strategy. They reported that diseases handled under this strategy are common to childhood and include; pneumonia, malaria, diarrhea and vomiting. In addition, the strategy allows for other interventions for managing the health of a child including; immunization, food supplementation and growth monitoring. This shows that the health workers are aware of the applicability and usefulness of the strategy. The findings concur with Kiplagat, Musto, Mwizamholya and Morona (2014) who found that 69% of trained healthcare workers expressed understanding of the IMCI approach. The knowledge and awareness of the health care workers will improve the uptake through better case management and information dissemination to the care givers.

The health care workers had positive attitudes and perceptions towards the IMCI strategy, believing that it had improved their case management skills and overall it would reduce child morbidity and mortality. The strategy uses simple clinical signs and empirical treatment. The health care workers are aware that the strategy is in place to improve their case management skills. Overall, the strategy is seen as a helpful tool. The findings are in agreement with Kiplagat *et al.* (2014), that most of the respondents (77%) had a positive attitude that IMCI approach was a better approach in managing common childhood illnesses especially with the reality of resource constraint in the health facilities. Duyen *et al.* (2013) also found that IMCI-trained workers were more likely to correctly classify illnesses (RR = 1.93, 95% CI: 1.66–2.24), prescribing medications (RR = 3.08, 95% CI: 2.04–4.66), vaccinating children (RR = 3.45, 95% CI: 1.49–8.01), and counseling families on adequate nutrition (RR = 10.12, 95% CI: 6.03–16.99) and administering oral therapies (RR = 3.76, 95% CI: 2.30–6.13). A positive attitude towards IMCI will yield positive outcomes in the children through education of the care givers to improve on feeding practices, disease prevention practices, home based care and care seeking behaviors. The health care worker will be more motivated to educate the care givers.

Since success in reducing childhood mortality requires more than the availability of adequate health services with well trained personnel, a major responsibility for caring for the children is placed on the care givers. Partnership between the health providers and families is very important. Health providers need to ensure that families provide adequate home care to support the healthy growth and development of their children. In this study however, the health workers had a negative attitude and perception towards the impact of the strategy on the care givers knowledge on family practices. This finding was not in agreement with Armstrong *et al.* (2004) who found that in facilities with IMCI, the caretakers of the children were more likely to receive appropriate counseling and reported higher levels of knowledge about how to care for their sick children. The negative attitude of health care workers to the care givers will negatively influence IMCI effectiveness since there needs to be a partnership between them to care for the children.

Following all steps in case management is important in order to avoid missing any danger signs. All health workers who come in contact with the children should follow all steps of case management in their daily practice on every child they see. In this study, following all the IMCI case management steps was seen as a challenge to some of the health workers due to work load, lack of training and job aids. These findings agree with Harwood *et al.* (2009) who found that IMCI consultations take longer, which is a particular problem given staff shortages in many clinics and the time taken for IMCI consultations did cause longer waiting times. Harwood *et al.* (2009) also found that there was consensus that the training improved the health workers' skills and confidence in managing sick children and job aids like the chart booklet was seen as a useful desk aid, which guided the health workers in the management of children. Proper IMCI case management practice reduces incidences of missed opportunities of immunization, treatment and weight checks.

Information dissemination is very important. The care givers play a very important part in caring for the children. They require the right information to be able to properly care for the children. Though the health care workers perceive the care givers as having very little knowledge on good health practices, the mothers at the clinic, however do feel that they get information on some ideal health practices from the health workers. This shows that the health worker is the key person to pass useful information to the mothers at the clinic. There were contrasting views on information dissemination between the health workers and respondents. While the health workers do not perceive the care givers as knowledgeable, the

care givers believe that they get most of their health information from the health workers. These findings concur with Thompson and Harutyunyan (2008) who found that after IMCI implementation and campaigns, many respondents reported exposure to health messages within the past month, with televised messages and/or direct contact with community health volunteers (47.3% and 44.9%, respectively) most often cited. IMCI improves the health practices of the cre givers. However, there was a discrepancy between the health care workers and caregivers on health information. This negative attitide is a factor be attributed to the number and state of sick children received at the clinic.

5.1.4 Policy factors that influence the effectiveness of IMCI among mothers of children attending the MCH/FP clinic.

Training is very important in empowering the health workers. It gives them the knowledge and confidence to carry out their daily activities. Majority of the health workers in this study had not been formally trained in IMCI. Lack of opportunity and work overload were sited as reasons for this. This is a big oversight from the stakeholders and government. The health workers however seemed to have received some on-the-job training since almost all were aware of the IMCI strategy and its applicability. These findings are not consistent with João *et al*. (2004), who found that, within the 48 facilities in which at least one health worker had been trained in IMCI case management, 65% reported that at least 60% of all workers managing children had been trained in IMCI. Kiplagat *et al*. (2014) also found that only 51% of healthcare workers interviewed had been trained. This shows lack of formal IMCI training of the health workers which could be a hindrance to proper IMCI effectiveness.

In this study, Government support of the health facilities was mixed. The areas that were adequately supported included job aids like client booklets which help in tracking progress of the mother and child starting from pregnancy, delivery and after delivery, incorporating the baby's welfare in terms of growth and development, immunizations issued and clinical notes from the clinicians and nutritionists. Medical equipment at the clinic required for proper IMCI implementation is quiet minimal. The strategy should be able to be comfortably used in all first level health facilities whether in the urban or rural areas. IMCI incorporates simple life-saving technologies such as Oral Rehydration Salts (ORS). These are widely available and inexpensive and were seen as adequately supported but there was room for improvement. These findings contradicted Mulei, Wafula and Goodman (2008) who reported that, the standard (medical) kits do not always contain all IMCI specific drugs for first-line or second-

line treatment. The improvement seen in this study can be attributed to the fact that Pumwani Maternity Hospital had a different procuring system and was not receiving supplies from a single parastatal procuring entity. However, Mulei *et al.* (2008) found that, in terms of equipment, health workers generally felt that weighing scales and thermometers, were well available in facilities. The availability of client booklets, medical equipment and drugs has a positive influence on the effectiveness of IMCI by dissemination of information and proper health monitoring and care.

The study found that areas that lacked government support includes availability of charts and regular support supervision. Regular support supervision is required to keep health care workers updated on improvements in existing protocols The findings are in agreement with Mulei *et al.* (2008), who found that, chart booklets and wall charts had been introduced to health facilities by health workers returning from training but both were rarely present in facilities with trained staff. João *et al.* (2004) found that supervision in the facilities was generally poor. Specific and regular support supervision of the health workers is required in making sure that IMCI protocols are followed. The lack of charts and support supervision will negatively impact IMCI effectiveness because the health care workers will not be properly informed on the proper practices.

The health care workers were evenly divided on the awareness and the availability of community health workers. Majority of the respondents were not aware of any government support towards the community health workers with views being that they are volunteers, paid by NGOs while others were not aware of any support at all. This shows a lack of linkage between community health workers and health care workers in the facility so that they are not aware of what the other is teaching or doing in the community they are both serving. The lack of linkage between them will have a negative impact on IMCI. The two need to work together to improve knowledge and linkage between the care givers and the health facility.

Limitations of the study include the fact that in cross-sectional design, causal-effect relationship cannot be determined. The sampling and recruitment at the MCH/FP clinic at Pumwani Maternity Hospital may have resulted in a bias towards clients who are able to access health facilities, who could be more endowed with resources than those who had no access. Social desirability bias may have occurred when respondents were interviewed. The mothers may have felt like they had to indicate that they were following some ideal family

practices especially if they had been stressed by health workers.The findings however do provide important information about factors associated with the uptake of the IMCI strategy and may have general implications on child morbidity and mortality.

5.2 Conclusions

Although there were 78.4% well children on the day of visit, 21.6% were unwell. Child morbidity causes stunting, wasting and even death. Although 74.5% of the children were of normal weight, about 25.7% were underweight. The effects of undernutrition in children include an increased risk to infections and ultimately, death. A majority of the children (88.5%) were fully immunized for age while 11.5% were not. Immunization prevents serious and deadly diseases. The IMCI strategy is in place however it is still not effective. The IMCI strategy should be implemented comprehensively with a focus on all three components, which include improving case management skills, improving overall health systems and improving family and community health practices.

Living in Nairobi or in an urban area, practicing the Christian faith and starting complementary feeding at 6 – 9 months are factors that enhance the effectiveness of the IMCI strategy. Proximity to a health facility, access to health information and frequent contact with a health care workers will enhance the effectiveness of the IMCI strategy.

Mentorship, training of health workers and increasing health worker numbers in facility influences the effectiveness of the IMCI strategy. This is because with proper information, the health worker is more confident and has less opportunities for error in their work and with more health workers in a health facility, there will be better outcomes due to quality work..

Availability of job aids, training of health workers, support supervision and improving the community health strategy is influencing the effectiveness of the IMCI strategy. Lack of job aids, training and support supervision will render health workers complacent and demotivated. This will hinder optimum performance. The community strategy needs to be improved as they are in constant contact with the community.

5.3 Recommendations

5.3.1 Action recommendation

The National and County governments with support from its partners, should implement all three components of the IMCI strategy. There needs to be a strategy for focused health information promotion to the caregivers on importance of regular interaction with a health facility or health workers.

The National and County governments also need to ensure regular mentorship, trainings and increase the number of health workers in the facilities.

The availability of job aids, regular support supervision, empowering the community through regular health talks and outreaches using different media channels and strengthening the community and community health workers with regular training and increasing their numbers needs to be taken up intensively by both the National and County governments.

5.3.2 Future recommendations

Further studies on the external influences of the IMCI strategy effectiveness and uptake are required in order to reduce child mortality and morbidity.

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APPENDICES

Appendix 1: Questionnaire (English)

TITLE OF STUDY:

FACTORS THAT INFLUENCE THE UPTAKE OF THE INTEGRATED MANAGEMENT OF CHILDHOOD ILLNESSES (IMCI) STRATEGY AMONG MOTHERS AT THE MCH/FP CLINIC AT PUMWANI MATERNITY HOSPITAL, KENYA.

Questionnaire serial number	
Research assistant's name	
Date of interview (dd/mm/yyyy)	
Patient's name (optional)	
Tribe of patient (optional)	

PART A: Socio-demographic and economic factors

1. Do you live in Nairobi? a. Yes b. No
2. How long have you lived in Nairobi?_____
3. What was your age at your last birthday? _____
4. What is your religion? a. Christian
   b. Muslim
   c. Other _____
5. Have you ever attended school? a. Yes b. No
6. What is your highest level of formal education? a. Primary school
   b. Secondary school
   c. Tertiary institution

d. None

7. How often do you read newspapers? a. Almost every day
   b. At least once a week
   c. Less than once a week
   d. Not at all
8. How often do you listen to radio? a. Almost every day
   b. At least once a week
   c. Less than once a week
   d. Not at all
9. How often do you watch television? a. Almost every day
   b. At least once a week
   c. Less than once a week
   d. Not at all
10. In the passed few months, have you heard or read about any health information on childhood illnesses:
    a. On radio
    b. On television
    c. In the newspapers
    d. On billboards
    e. From community members
       Specify_____
    f. From health workers
    g. Other
       Specify_____
11. Apart from housework, have you done any other work in the last 7 days? a. Yes
    b. No
12. If no, are you on leave or off in your normal occupation? a. Yes b. No
13. If yes, do you get cash payments in your occupation? a. Yes b. No
14. Have you given birth to any children who passed away? a. Yes
    b. No
15. Do you have a spouse or partner? a. Yes b. No
    If no, go to question 20
16. If yes, do you live with your spouse or partner? a. Yes b. No
17. What was the age of your spouse or partner at his last birthday?_____

18. Has your spouse or partner ever attended school? a. Yes b. No

If no, go to question 34

19. What is his highest level of education?
    a. Primary school
    b. Secondary school
    c. Tertiary institution
    d. None
    e. Don't know

20. Who makes decisions on healthcare issues of the children?
    a. Respondent
    b. Husband/ partner
    c. Jointly
    d. Other_____

21. How many people live in your household?_____

22. What is the main source of water in your house?
    a. Piped into dwelling
    b. Public tap/standpipe
    c. Well or borehole
    d. Collected rainwater
    e. Bottled / purchased water
    f. Other_____

23. How regular is your water supply?
    a. Daily
    b. Twice a week
    c. Once a week
    d. Twice a month
    e. Once a month
    f. Very irregular
    g. Other _____

24. Do you do anything to the water to make the water clean/safe?
    a. Yes
    b. No
    c. Don't know

25. If yes, what do you do?
    a. Boil
    b. Use bleach / chlorine
    c. Use water filter

d. Solar disinfection

e. Let it stand and settle

f. Other_____

g. Don't know

26. What kind of toilet facility is used by your household?

a. Flush or pour toilet

b .Pit latrine

c. Bucket toilet

d. No facility

e. Other_____

27. Do you share this facility with other households? a. Yes

b. No

28. If yes, how many households?_____

29. Do you have any of the following items in your house?

a. Electricity

b. Radio

c. Television

d. Telephone

e. Fridge

30. What fuel do you use for cooking? a. Electricity

b. LPG/ Natural gas

c. Kerosene

d. Charcoal

e. Wood

f. None

g. Other_____

31. Do you have a separate room for a kitchen? a. Yes

b. No

c. Other_____

32. What is the main material of your floor? a. Natural floor/ mud

b. Wooden planks

c. Polished wood

d. Vinyl

e. Ceramic tiles

f. Cement

g. Other_____

33. What is the main material of your roof?
    a. Natural roofing/ thatch
    b. Corrugated iron
    c. Concrete
    d. Tiles

34. What is the main material of your walls?
    a. No walls
    b. Dirt
    c. Cardboard
    d. Wood
    e. Stone
    f. Other_____

PART B: Family practices:

a. Feeding practices

If child is more than 4 months old,

1. Did you practice exclusive breastfeeding for 4 months? a. Yes b. No

If child is less than 4 months old,

2. Are you exclusively breastfeeding? a. Yes b. No
3. How long after birth did you start breastfeeding?
    a. Immediately
    b. Hours_____
    c. Days_____
4. In the first 3 days, were any other drinks given to the infant?
    a. Yes
    b. No
5. If yes, which ones?_____
6. At 6 – 9 months, did you start complementary feeding while continuing to breastfeed? a. Yes b. No c. Not yet 6 months
7. Are you still breastfeeding? a. Yes b. No
8. If no, how many months did you breastfeed for?
    a. Months_____
    b. Don't know
9. Did your baby take any drinks from a bottle with a nipple yesterday or at night?
    a. Yes
    b. No
10. From the health card, record any issuing of vitamin A:_____

11. If no record on card ask if the has baby received any vitamin A supplement in the last 6 months? a. Yes
    b. No
12. Does your child take any iron pills, sprinkles of iron or iron syrup? a. Yes
    b. No

b. Disease prevention practices

1. How do you dispose stool in your house hold?
    a. Toilet
    b. Washed into toilet
    c. Rinse in drain
    d. In garbage
    e. Bury
    f. Left out
    g. Other _____
2. Do you wash hands after using the toilet? a. Yes b. No
3. How often? a. Every time
    b. Not every time
    c. Not at all
    d. Don't know
    e. Other_____
4. Do you use soap? a. Yes b. No
5. Do you wash your hands before preparing meals? a. Yes b. No
6. How often? a. Every time
    b. Not every time
    c. Not at all
    d. Don't know
    e. Other_____
7. Do you wash your hands before feeding your child? a. Yes b. No
8. How often? a. Every time
    b. Not every time
    c. Not at all
    d. Don't know
    e. Other_____
9. Do you have readily available water for this practice? a. Yes b. No

10. Do your children sleep under insecticide treated nets (ITNs)? a. Yes
b. No

11. Everyday? a. Yes b. No

12. Do you have a record of vaccinations given to your child? a. Yes
b. No

c. Home based care practices

1. Has your child experienced any diarrhea? a. Yes b. No

If no go to question 7

2. If yes, was there blood in the stool? a. Yes b. No
3. How much fluid was given during the period?
    a. More than usual
    b. Same as usual
    c. Less than usual
    d. Don't know
4. How much food was given during the period?
    a. More than usual
    b. Same as usual
    c. Less than usual
    d. Don't know
5. Did you give the child anything to try and stop the diarrhea? a. Yes
b. No
6. If yes, what did you give?_____
7. Has your child experienced any fever? a. Yes b. No

If no go to question 12

8. If yes, how much fluid was given during the period?
    a. More than usual
    b. Same as usual
    c. Less than usual
    d. Don't know
9. How much food was given during the period?
    a. More than usual
    b. Same as usual
    c. Less than usual
    d. Don't know

10. Did you give or do anything to stop the fever? a. Yes b. No

11. If yes, what did you give?_____

12. Has your child experienced a cough with rapid short breathing?

a. Yes

b. No

If no go to question part d

13. If yes, was the short, rapid breathing due to a blocked nose or the chest?

a. Yes

b. No

14. How much fluid was given during the period?

a. More than usual

b. Less than usual

c. Same as usual

d. Don't know

15. How much food was given during the period?

a. More than usual

b. Less than usual

b. Same as usual

c. Don't know

16. Did you give anything for the cough? a. Yes b. No

17. If yes, what did you give?_____

d. Care seeking practices

From health card records or mother's memory,

1. Has your child ever experienced diarrhea? a. Yes b. No

   If no go to question 5

2. If yes, did you seek advice or treatment for diarrhea from any source?

   a. Yes

   b. No

   If no go to question 5

3. If yes, where?

   a. Public facility- hospital/health center/dispensary

   b. Private facility- mission hospital/private hospital

   c. Private pharmacy

   d. Community health worker

e. Traditional healer

f. Friend/ relative

g. Other_____

4. How many days after the diarrhea started did you seek treatment?_____
5. Has your child ever experienced any fever? a. Yes b. No

   If no, go to question 12
6. If yes, did you seek advice or treatment of fever from any source?

   a. Yes b. No

If no go to question 12

7. If yes, where?

   a. Public facility- hospital/health center/dispensary

   b. Private facility- mission hospital/private hospital

   c. Private pharmacy

   d. Community health worker

   e. Traditional healer

   f. Friend/ relative

   g. Other_____
8. How many days after the fever started did you seek treatment?_____
9. For how many days did you give the drugs?_____
10. Did you do anything else for the fever? a. Yes b. No
11. What did you do?

    a. Consulted a traditional healer

    b. Warm sponging

    c. Gave traditional herbs

    d. Other _____
12. Has your child ever experienced any cough with short, rapid breathing?

    a. Yes b. No

    If no, go to question 16
13. If yes, did you seek advice or treatment of the cough from any source?

    a. Yes b. No

If no go to question 16

14. If yes, where?

    a. Public facility- hospital/health center/dispensary

    b. Private facility- mission hospital/private hospital

c. Private pharmacy
d. Community health worker
e. Traditional healer
f. Friend/ relative
g. Other_____

15. How many days after the cough started did you seek treatment?_____
16. Have you ever heard of ORS for diarrhea? a. Yes b. No
17. When your child is sick, what signs tell you when to take the child for treatment?
    a. Not able to drink or breastfeed
    b. Has fever or shivering
    c. Repeated vomiting
    d. Diarrhea
    e. Blood in stool
    f. Fast breathing
    g. Convulsions
    h. Weakness
    i. Getting sicker
    j. Other _____

PART C: Health status of the child from health card

1. Age of child_____
2. Gender of child_____
3. Weight of child_____
4. From growth chart, is he/she
    a. Under weight
    b. Normal weight
    c. Over weight
    d. Not recorded
5. Is child fully immunised? a. Yes b. No c. Not available
6. Ask mother if child is sick today? a. Yes b. No
7. What is the chief complaint?_____

Appendix 2: Questionnaire (Swahili)

MADA YA UTAFITI:

SABABU ZINAZOSHAWISHI MATUMIZI YA MKAKATI WA IMCI KATI YA AKINA MAMA KATIKA KLINIKI YA AKINA MAMA NA WATOTO NA UPANGAJI UZAZI ULIOKO HOSPITALI YA PUMWANI MATERNITY, KENYA.

Nambari ya hojaji	
Jina la msaidizi wa mtafiti	
Tarehe ya mahojiano (ss/mm/mwaka)	
Jina la mhojiwa (siyo lazima)	
Kabila la mhojiwa (siyo lazima)	

SEHEMU A: Sababu za kijamii na kiuchumi za mhojiwa

1. Unaishi mjini Nairobi? a. Ndio b. La
2. Umeishi Nairobi kwa muda mgani?_____
3. Ulikua miaka ngapi katika siku yako ya kuzaliwa ulio pita hivi karibuni?_____
4. Unafuata dini gani? a. Ukristo
   b. Uislamu
   c. Nyingine _____
5. Umewahi kuenda shule? a. Ndio b. La
6. Kiwango chako cha juu ya elimu ni kipi? a. Shule ya msingi
   b. Shule ya upili
   c. Chuo kikuu
   d. Sija soma
7. Wewe husoma gazeti mara ngapi? a. Kila siku
   b. Mara moja kwa wiki
   c. Chini ya mara moja kwa wiki

d. Sisomi

8. Wewe husikiliza redio mara ngapi? a. Kila siku
   b. Mara moja kwa wiki
   c. Chini ya mara moja kwa wiki
   d. Sisikizi
9. Wewe hutazama runinga mara ngapi? a. Kila siku
   b. Mara moja kwa wiki
   c. Chini ya mara moja kwa wiki
   d. Sitazami
10. Katika miezi michache yalio pita, umewahi kusoma au kusikia habari zozote kuhusu maneno ya afya na magonjwa ya watoto kupitia:
    a. Redio
    b. Runinga
    c. Magazeti
    d. Kibao cha matangazo ya umma
    e. Wanachama wa jamii, Taja _____
    f. Wafanyakazi wa afya
    g. Pengine,Taja_____
11. Umefanya kazi nyingine tofauti na kazi ya nyumba yako katika muda wa siku 7 zilizopita? a. Ndio
    b. La
12. Kama la, uko katika mapumziko kwenye kazi yako ya kila siku? a. Ndio
    b. La
13. Kama ndio, unapata malipo ya pesa katika kazi yako? a. Ndio
    b. La
14. Unawatoto wangapi walio hai? _____
15. Umewahi kuzaa watoto ambao waliaga dunia?
    a. Ndio
    b. La
16. Una mume au mpenzi? a. Ndio b. La
    Kama la, ona swali 21
17. Kama ndio, unaishi na mume au mpenzi wako? a. Ndio b. La
18. Umri wa mume au mpenzi wako ulikua ipi wakati wa siku yake ya kuzaliwa ulio pita hivi karibuni?_____

19. Mume au mpenzi wako amewahi kuenda shule? a. Ndio b. La

Kama la, ona swali 34

20. Kiwango chake cha juu ya elimu ni ipi? a. Shule ya msingi
    b. Shule ya upili
    c. Chuo kikuu
    d. Hajasoma

21. Nani anafanya uamuzi kuhusu maneno ya afya ya watoto wako?
    a. Mhojiwa
    b. Mume au mpenzi wa mhojiwa
    c. Wote wawili pamoja
    d. Mwingine_____

22. Watu wangapi wanaishi katika nyumba yako?_____

23. Maji hupatikana wapi katika nyumba yako?
    a. Kwenya mfereji ndani ya nyumba
    b. Mfereji unaotumiwa na kila mtu
    c. Kisima kilichochimbwa
    d. Maji ya mvua
    e. Maji ya chupa/ yakununua
    f. Pahali pengine_____

24. Mnapata maji mara ngapi?
    a. Kila siku
    b. Mara mbili kwa wiki
    c. Mara moja kwa wiki
    d. Mara mbili kwa mwezi
    e. Mara moja kwa mwezi
    f. Haijulikani/ wakati wowote
    g. Nyingine _____

25. Unafanyia maji hii chochote ili iwe safi?
    a. Ndio
    b. La
    c. Sijui

26. Kama ndio, unaifanyia nini?
    a. Chemsha
    b. Tumia dawa ya kusafisha

c. Kifaa cha kuitenga chafu
d. Kusafisha kupitia mwangazo wa jua
e. Kuiacha isimame
f. Kifaa kingine
g. Sijui

27. Mnatumia choo cha aina gani katika nyumba yako?
    a. Choo chakupiga maji
    b. Choo cha kuchimba
    c. Choo cha karai
    d. Hatuna
    e. Aina nyingine_____

28. Mnatumia choo hii na kaya zingine?
    a. Ndio
    b. La

29. Kama ndio, kaya ngapi?_____

30. Unavifaa hivi kwenye nyumba yako?
    a. Stima
    b. Redio
    c. Runinga
    d. Simu
    e. Fridge

31. Unatumia nini kupikia chakula?
    a. Stima
    b. Gesi
    c. Mafuta ya taa
    d. Makaa
    e. Kuni
    f. Hakuna
    g. Nyingine_____

32. Una chumba tofauto cha kupikia?
    a. Ndio
    b. La
    c. Nyingine _____

33. Sakafu ya nyumba yako imetengenezwa na nini?

a. Tope
b. Mbao
c. Mbao iliongarishwa
d. Vinyl
e. Taili ya kauri
f. Saruji
g. Nyingine_____

34. Paa la nyumba yako imetengenezwa na nini?

a. Makuti
b. Mabati
c. Saruji
d. Matofali
e. Nyingine_____

35. Kuta za nyumba yako zimetengenezwa na nini?

a. Hakuna kuta
b. Tope
c. Kadibodi
d. Mbao
e. Mawe
f. Nyingine_____

SEHEMU B: Mazoea ya familia:

a. Mazoea ya lishe

Kama mtoto ana umri wa zaidi ya miezi 4

1. Ulimnyonyesha mtoto peke yake hadi alipofika miezi 4?

a. Ndio
b. La

Kama mtoto ana umri wa chini ya miezi 4

2. Unamnyonyesha mtoto peke yake?

a. Ndio
b. La

3. Ulichukua mda mgani kuanza kumnyonyesha baada ya kuzaliwa kwake?

a. Mara moja
b. Masaa_____

c. Masiku_____

4. Katika siku za kwanza 3, kuna vinywaji vingine vilivyo pewa mtoto?
    a. Ndio
    b. La
5. Kama ndio, gani?_____
6. Mtoto alipofika umri wa miezi 6 hadi 9, ulianza kumpa chakula nyongeza wakati ulipokuwa ukiendelea kumnyonyesha?
    a. Ndio
    b. La
    c. Hajafika miezi 6
7. Bado unamnyonyesha mtoto?
    a. Ndio
    b. La
8. Kama la, ulimnyonyesha
    a. Miezi mingapi_____
    b. Sijui
9. Mtoto wako alikunywa kinywaji chochote kutoka kwa chupa kilicho na kifaa cha kunyonya jana au usiku uliopita?
    a. Ndio
    b. La
10. Kutoka kwa recodi ya afya ya mtoto, angalia:
    a. Recodi ya kupewa vitamini A ipo
    b. Hakuna recodi

    Kama hakuna recodi uliza,
11. Mtoto amepata vitamini A katika miezi 6 zilizopita?
    a. Ndio
    b. La
12. Mtoto wako anachukua tembe au dawa ya kunywa ya iron?
    a. Ndio
    b. La

b. Mazoea ya kuzuia magonjwa

1. Katika nyumba yako, kinyesi inatupwa vipi?
    a. Kwenye choo
    b. Inaoshwa kwenye choo

c. Suuza kwa unyevu
d. Kwenye taka
e. Inazikwa
f. Inaachwa nje
g. Kwengine _____

2. Unayaosha mikono yako kila unapo tumia choo?
    a. Ndio
    b. La
3. Kila wakati?
    a. Kila wakati
    b. Si kila wakati
    c. Siyaoshi
    d. Sijui
    e. Nyingine_____
4. Unatumia sabuni?
    a. Ndio
    b. La
5. Unayaosha mikono yako kabla ya kupika chakula?
    a. Ndio
    b. La
6. Kila wakati?
    a. Kila wakati
    b. Si kila wakati
    c. Siyaoshi
    d. Sijui
    e. Nyingine_____
7. Unayaosha mikono yako kabla ya kumpa mtoto chakula?
    a. Ndio
    b. La
8. Kila wakati?
    a. Kila wakati
    b. Si kila wakati
    c. Siyaoshi
    d. Sijui

e. Nyingine_____

9. Una maji ambayo imetengewa kufanya hivi?
    a. Ndio
    b. La
10. Watoto wako wanalala chini ya neti iliowekwa dawa ya kuzuia mbu?
    a. Ndio
    b. La
11. Kila siku?
    a. Ndio
    b. La
12. Una recodi ya chanjo mtoto wako amepokea?
    a. Ndio
    b. La

c. Huduma za nyumbani

1. Mtoto wako amewahipata ugonjwa wa kuhara?
    a. Ndio
    b. La

Kama la, ona swali 7

2. Kama ndio, kulikua na damu kwenye kinyesi?
    a. Ndio
    b. La
3. Mtoto alipatiwa vinywaji kiasi gani wakati huo?
    a. Vingi kuliko kawaida
    b. Kama kawaida
    c. Kidogo kuliko kawaida
    d. Sijui
4. Mtoto alipatiwa chakula kiasi gani wakati huo?
    a. Kingi kuliko kawaida
    b. Kama kawaida
    c. Kidogo kuliko kawaida
    d. Sijui
5. Ulimpatia mtoto kitu chochote ili kusimamisha kuhara?
    a. Ndio
    b. La

6. Kama ndio, ulimpatia nini?_____
7. Mtoto wako amewahi kupata joto mwilini?
    a. Ndio
    b. La

Kama la, ona swali 12

8. Kama ndio, alipatiwa vinywaji kiasi gani wakati huo?
    a. Vingi kuliko kawaida
    b. Kama kawaida
    c. Kidogo kuliko kawaida
    d. Sijui
9. Alipatiwa chakula kiasi gani wakati huo?
    a. Kingi kuliko kawaida
    b. Kama kawaida
    c. Kidogo kuliko kawaida
    d. Sijui
10. Ulimpa kitu chochote ili kusimamisha joto?
    1. Ndio
    2. La
11. Kama ndio, ulimpa nini?_____
12. Mtoto wako amewahi pata kohozi linalo fuatwa na kupumua kwa ufupi na upesi?
    a. Ndio
    b. La

Kama la, ona sehemu d

13. Kama ndio, hiyo kupumua kwa ufupi na upesi ulikuwa kwa sababu ya kufungana kwa pua au kwa sababu ya kifua chake?
    a. Ndio
    b. La
14. Alipatiwa vinywaji kiasi gani wakati huo?
    a. Vingi kuliko kawaida
    b. Kama kawaida
    c. Kidogo kuliko kawaida
    d. Sijui
15. Alipatiwa chakula kiasi gani wakati huo?

a. Kingi kuliko kawaida
b. Kama kawaida
c. Kidogo kuliko kawaida
d. Sijui

16. Ulimpatia kitu chochote ili kutibu kohozi hilo?
    a. Ndio
    b. La
17. Kama ndio, ulimpa nini?_____

d. Mazoea ya kutafuta tiba

Kutoka kwenye recodi au kumhoji mama,

1. Moto wako amewahi pata ugonjwa wa kuhara?
    a. Ndio
    b. La

Kama la, ona swali 5

2. Kama ndio, ulitafuta usaidizi au tiba wapi?
    a. Hospitali ya umma
    b. Hospitali ya kibinafsi
    c. Duka la dawa la kibinafsi
    d. Mfanyakazi wa afya ya jamii
    e. Mganga wa jadi
    f. Rafiki/ jamaa yako
    g. Mwengine_____
3. Siku ngapi zilipita, tangu kuanza kwa ugonjwa wa kuhara ndio mtoto alianza tiba?_____
4. Mtoto wako amewahi pata ugonjwa wa joto wa mwili?
    a. Ndio
    b. La

    Kama la, ona swali 10
5. Kama ndio, ulitafuta usaidizi au tiba wa joto wa mwili kutoka pahali popote?
    a. Ndio
    b. La

    Kama la, ona swali 10
6. Kama ndio, ulitafuta usaidizi au tiba wapi?
    a. Hospitali ya umma

b. Hospitali ya kibinafsi
c. Duka la dawa la kibinafsi
d. Mfanyakazi wa afya ya jamii
e. Mganga wa jadi
f. Rafiki/ jamaa yako
g. Mwengine_____

7. Siku ngapi baada ya joto wa mwili kuanza ndipo ulipotafuta tiba?_____
8. Ulimfanyia mtoto kitu kingine chochote ili joto lipungue?
    a. Ndio
    b. La
9. Kama ndio, ulimfanyia nini?
    a. Nilipata ushauri kutoka kwa mganga wa jadi
    b. Mpangusa na maji ya joto
    c. Mpa miti shamba
    d. Nyingine _____
10. Mtoto wako amewahi pata kohozi linalo fuatwa na kupumua kwa ufupi na upesi?
    a. Ndio
    b. La

Kama la, ona swali 14

11. Kama ndio, ulitafuta usaidizi au tiba kuitibu kohozi hilo?
    a. Ndio
    b. La
12. Kama ndio, ulitafuta usaidizi au tiba wapi?
    a. Hospitali ya umma
    b. Hospitali ya kibinafsi
    c. Duka la dawa la kibinafsi
    d. Mfanyakazi wa afya ya jamii
    e. Mganga wa jadi
    f. Rafiki/ jamaa yako
    g. Mwengine _____
13. Ulipata tiba siku ngapi baada ya kikohozi kuanza?_____

14. Umewahi kusikia kuhusu ORS inayopewa wakati wa kuhara?
    a. Ndio
    b. La
15. Wakati mtoto wako ni mgonjwa, ni dalili gani zitakufanya umpeleke kupewa tiba?
    a. Kuto weza kunywa au kunyonya
    b. Joto au kutetemeka
    c. Kutapika mara mingi
    d. Kuhara
    e. Damu kwenye kinyesi
    f. Kupumua haraka
    g. degedege
    h. Kupingukiwa nguvu
    i. Kuendelea kuwa mgonjwa zaidi
    j. Nyingine _____

SEHEMU C: Hali ya afya ya mtoto kutoka recodi ya afya

1. Umri wa mtoto_____
2. Jinsia wa mtoto_____
3. Uzito wa mtoto_____
5. Kutoka kwa recodi ya mtoto, mtoto yuko
    a. Uzito wa chini
    b. Uzito wa kawaida
    c. Uzito wa juu
    d. Hakuna recodi
6. Mtoto amepatiwa chanjo zote zinazotakikana? a. Ndio b. La c. Hakuna recodi
7. Uliza mama, mtoto ni mgonjwa leo? a. Ndio b. La
8. Mtoto anaugua wapi ?_____

Appendix 3: Focused Group Discussion Guide (English)

TITLE OF STUDY:

FACTORS THAT INFLUENCE THE UPTAKE OF THE INTEGRATED MANAGEMENT OF CHILDHOOD ILLNESSES (IMCI) STRATEGY AMONG MOTHERS AT THE MCH/FP CLINIC AT PUMWANI MATERNITY HOSPITAL, KENYA.

Discussion serial number	
Research assistant's name	
Date (dd/mm/yyyy)	

Introduction

Today we will be discussing some family practices that help in child development and growth in your households. For each of the practices, we will discuss:-

- The factors that influence its practice
- Challenges encountered in implementation and practice

The family practices under discussion are:-

a. Exclusive breastfeeding for first 6 months
b. Complementary feeding from 6 months
c. Micronutrients provision esp. vitamin A and iron through diet or supplementation
d. Promotion of the mental and social child development through talking and playing
e. Full immunization
f. Feacal disposal and hand washing
g. Insecticide Treated Nets (ITNs) to protect children
h. HIV/ AIDS prevention and care for sick
i. Home care of a sick child ie. Feeding, fluids and treatment
j. Avoid abuse and neglect of children and action taken if it occurs
k. Ensuring active participation of men in child care and family reproductive health issues
l. Prevention of child injuries and accidents
m. Recognizing when child needs treatment outside the home and seeking the treatment
n. Following health worker advice ie. following treatment, follow up and referral
o. Importance of prenatal care

Appendix 4: Focused Group Discussion Guide (Swahili)

MADA YA UTAFITI:

SABABU ZINAZOSHAWISHI MATUMIZI YA MKAKATI WA IMCI KATI YA AKINA MAMA KATIKA KLINIKI YA AKINA MAMA NA WATOTO NA UPANGAJI UZAZI ULIOKO HOSPITALI YA PUMWANI MATERNITY, KENYA.

Nambari ya mjadala	
Jina la msaidizi wa mtafiti	
Tarehe ya mahojiano (ss/mm/mwaka)	

Utangulizi

Leo tutajadiliana kuhusa utendaji za familia zinazo saidia maendeleo na ukuaji wa watoto katika kaya zenu. Katika kila utendaji, tutajadiliana:-

- Sababu zinazoshawishi utendaji huo
- Changamoto zinazotokana na utekelezaji na utendaji

Utendaji za familia tutazo jadiliana ni haya:-

a. Kunyonyesha mtoto miezi 6 za kwanza
b. Kumpa mtoto vyakula vingine baada ya miezi 6
c. Upeaji wa virubutisho vya Vitamini A and iron kupitia chakula na nyongeza
d. Kukuza maendeleo ya akili na ujamii wa mtoto kupitia mazungumzo na michezo
e. Chanjo kamili
f. Vile mnavyo tupa choo na uoshaji wa mkono
g. Kutumia neti zilizo tibiwa kwa dawa kukinga watoto
h. Kuzuia HIV/ AIDS na malezi ya walio wagonjwa
i. Malezi ya mtoto mgonjwa nyumbani, kama kumpa vyakula, vinywaji na matibabu
j. Kuzuia mateso na kutelekezwa kwa watoto na kile unachofanya vitendo hivi vikitendeka
k. Kuhakikisha wanaume wanashiriki katika malezi ya watoto na kuhusu maneno ya afya ya kijamii.
l. Kuzuia kuumia kwa mtoto na ajali
m. Kujua wakati na kumpeleka mtoto kutafuta matibabu nje ya nyumba
n. Kufuata mawaidha ya wafanyikazi wa afya, kama maagizo ya tiba, kurudi hospitalini na kuenda kwenya hospitali nyingine
o. Umuhimu wa malezi za wamama wajawazito.

Appendix 5: Key Informant Interview Guide

TITLE OF STUDY:

FACTORS THAT INFLUENCE THE UPTAKE OF THE INTEGRATED MANAGEMENT OF CHILDHOOD ILLNESSES (IMCI) STRATEGY AMONG MOTHERS AT THE MCH/FP CLINIC AT PUMWANI MATERNITY HOSPITAL, KENYA.

Interview serial number	
Interviewee's name (optional)	
Research assistant's name	
Date (dd/mm/yyyy)	
Cadre	
Age	
Gender	

1. The IMCI strategy was introduced in Kenya in 1999. To your knowledge, what is it and what does it involve?
2. To date, many health workers have been trained in the IMCI strategy. Have you ever received any training on IMCI? Elaborate, when, why not.
3. The IMCI strategy has a case management guideline that includes assessing the child, classifying child's illness, identifying treatment, providing treatment instruction, assessing feeding practices and counseling and giving follow up care. Do you follow all the steps in your daily practice? Elaborate, how often, why not.
4. The IMCI strategy involves the use of several job aids which include, case management charts, case recording forms, treat the child charts and counsel the mother charts. Do you have, use or know of the aids? Why not?
5. Facility support is very important in the success of the IMCI strategy. This includes, medical equipment, drugs and supervision. In your opinion, does the facility get adequate support?
6. The IMCI strategy focuses a lot on case management skills. In your opinion, has the strategy improved your case management skills?
7. A very important component in the IMCI strategy is the community IMCI. The care givers and community members need to know the proper feeding practices, disease prevention practices, home based care practices and care seeking practices. In your

opinion is the community IMCI component working? Are the care givers knowledgeable in these practices?

8. Do you know whether there are any community health workers who give health talks on proper family practices which would greatly reduce the number of child illness? Is there government support of this nature?

9. Child mortality and morbidity is still unacceptably high in Kenya. The IMCI strategy should be able to reduce these rates. In your opinion, do you think the the IMCI strategy has made an impact in child mortality and morbidity rates?

10. In your opinion, what needs to be done to improve awareness of the community component of the IMCI strategy?

11. In your opinion, what should be done to improve the uptake of the IMCI strategy by the health workers?

Appendix 6: Consent Form for Questionnaire (English)

TITLE OF STUDY:

FACTORS THAT INFLUENCE THE UPTAKE OF THE INTEGRATED MANAGEMENT OF CHILDHOOD ILLNESSES (IMCI) STRATEGY AMONG MOTHERS AT THE MCH/FP CLINIC AT PUMWANI MATERNITY HOSPITAL, KENYA.

Researcher	Institution	Contact
Vicky C. Maiyo	ITROMID-JKUAT	0724-065667
Dr. Peter Wanzala	CPHR-KEMRI	0721-624374
Dr. Kenneth Ngure	JKUAT	0722-362219

PART A

This study is being conducted by Vicky C. Maiyo from the Institute of Tropical Medicine and Infectious Diseases, Jomo Kenyatta University of Agriculture and Technology.

You are invited to participate in a study on the Factors that influence the uptake of the Integrated Management of Childhood Illnesses (IMCI) strategy among mothers at the MCH/FP clinic at Pumwani Maternity Hospital, Kenya. The objective of this study is to determine the factors that influence the uptake of the Integrated Management of Childhood Illnesses (IMCI) strategy among mothers at the MCH/FP clinic at Pumwani Maternity Hospital, Kenya. You have been selected as a possible participant in this study. We ask that you read this form and ask any questions you may have before agreeing to be in the study.

Purpose of the study

To determine the factors that influence the uptake of the Integrated Management of Childhood Illnesses (IMCI) strategy at the MCH/FP clinic at Pumwani Maternity Hospital, Kenya.

Study Procedures

If you agree to take part in this study:

We shall ask you detailed questions regarding yourself and your household, your family practices including; your child feeding practices, your disease prevention practices, your home based care practices and your care seeking practices. We shall also look at your child's health card and collect data on immunizations received. We shall note your answers and data from your medical records on paper. The information that you will provide and will be collected during the study will be kept confidential and locked in cabinets. Only the

interviewer and the researcher will have access to the questionnaires. The information will be destroyed 3 years after completion of the evaluation of the study.

Risks for Study Participants:

This study has no anticipated risks. However, you may feel embarrassed, worried, or anxious when talking about yourself, household and family practices to the study staff. Counselors are available through the study who will help you deal with any feelings or questions you have. Although we shall write your details on paper, no other person will be allowed to read this information except the ones directly involved in this study.

Benefits:

The potential benefits of the study to you will include reiteration of ideal family practices in prevention of common childhood illnesses and identifying any knowledge gaps in your current daily family practice and filling these gaps. The benefits to society, in your participation in this study and answering our questions, will be to help increase our understanding of the needs regarding effective health promotion to reduce child mortality and morbidity. However, there will be no direct benefits your children.

Study costs:

Taking part in this study will not involve any payment for those procedures we perform.

Research related injury:

There are almost no chances of you getting an injury in the course of our study.However,if you are physically injured as a result of participating in this study the study staff will give you immediate necessary treatment for your injuries. There is no program monetary compensation or other forms of compensation for such injuries. You do not give up any legal rights by signing this consent form.

Confidentiality:

If you choose to participate, the records of this study will be kept confidential. The privacy will be enhanced by use of a lockable cabinet at the study site. Absolute confidentiality cannot be guaranteed. Your personal information may be disclosed if required by law. However, your record for the study may be reviewed by officials from the Institute of Tropical Medicine and Infectious Diseases (ITROMID, KEMRI) or Jomo Kenyatta University of Agriculture and Technology. If the records are reviewed, the officials will protect your privacy. Any publications or presentations arising from this study will not include any information that will make it possible to identify you as a subject. All findings used in any written reports or publications which result from this study will be reported in aggregate form with no identifying information.

Voluntary nature of the study:

Participation in this study is voluntary. You have the right to refuse to participate or to answer any question that you feel is uncomfortable with you. If you change your mind, you have the right to withdraw at any time. If anything is not clear or if you need any further information, we shall provide it to you. Your decision whether or not to participate in this study will not affect your current or future relations with this hospital or the other institutions involved. If you decide to participate, you are free to withdraw at anytime without affecting those relationships.

Contacts and questions:

The researcher conducting this study is Vicky C. Maiyo. You may ask any questions you have now, or if you have questions later, you are encouraged to contact her through telephone number: 0724-065667, e-mail: vicky@i-kart.biz

If you have any questions or concerns regarding the study and would like to talk to someone other than the researcher(s), you are encouraged to contact the following:

The Secretary, KEMRI Ethics Review Committee,

P.O. Box 54840-00200,

Nairobi, KENYA

Tel: (254) 020-2722541, 0722-205901 and 0733-400003

Email: erc@kemri.org

You will be given a copy of this form for you records.

PART B: CONSENT FORM

Please read the information sheet (PART A) or have the information read to you carefully before completing and signing this consent form. If there are any questions you have about the study, please feel free to ask them to the investigator prior to signing your consent.

Declaration of the volunteer:

I Miss/ Mrs, …… hereby give consent to Vicky C. Maiyo to include me in the proposed study entitled Factors that influence the uptake of the IMCI strategy among mothers at the MCH/FP at Pumwani Maternity Hospital. I have read the information sheet concerning this study, I understand the aim of this study and what will be required of me if I take part in the study. The risks and benefits if any have been explained to me. Any questions I have concerning the study have been adequately answered.

I understand that at any time that I may wish to withdraw from this study I can do so without giving any reason and without affecting my access to normal health care and management.

I realize that I will be interviewed once. I consent voluntarily to participate in this study.

Subject'sname……...……...…

Signature or left thumb print…….……...…

Date……..…

Name of person taking consent……...…….

Signature…….....Date……..…

Name of investigator…….……...

Signature …….Date……..……...…

Appendix 7: Consent Form for Questionnaire (Swahili)

MADA YA UTAFITI:

SABABU ZINAZOSHAWISHI MATUMIZI YA MKAKATI WA IMCI KATI YA AKINA MAMA KATIKA KLINIKI YA AKINA MAMA NA WATOTO NA UPANGAJI UZAZI ULIOKO HOSPITALI YA PUMWANI MATERNITY, KENYA.

Mtafiti	**Taasisi**	**Wasiliana**
Vicky C. Maiyo	ITROMID-JKUAT	0724-065667
Dr. Peter Wanzala	CPHR-KEMRI	0721-624374
Dr. Kenneth Ngure	JKUAT	0722-362219

SEHEMU YA A

Utafiti huu unafanywa na Vicky C. Maiyo wa Taasisi ya Dawa za Kitropiki na Magonjwa ya Kuambukizana, Chuo kikuu cha Kilimo na Technologia cha Jomo Kenyatta.

Umealikwa kushiriki katika utafiti huu wa sababu zinazoshawishi matumizi ya mkakati wa IMCI kati ya akina mama katika kliniki ya akina mama na watoto na upangaji uzazi ulioko hospitali ya Pumwani Maternity, Kenya. Lengo la utafiti huu ni kugundua sababu zinazoshawishi matumizi ya mkakati wa IMCI kati ya akina mama katika kliniki ya akina mama na watoto na upangaji uzazi ulioko hospitali ya Pumwani Maternity, Kenya. Umechaguliwa kama mshiriki katika utafiti huu. Tunakuomba usome fomu hii na uulize maswali yoyote kabla ya kukubali kushiriki katika utafiti huu.

Sababu ya utafiti

Kutambua sababu zinazoshawishi matumizi ya mkakati wa IMCI katika kliniki ya akina mama na watoto na upangaji uzazi ulioko hospitali ya Pumwani Maternity, Kenya.

Mkakati wa utafiti:

Iwapo utakubali kushiriki katika utafiti huu:

Tutakuuliza maswali juu yako mwenyewe na kaya yako na mazoea ya familia yako kuhusu vile unavyolisha mtoto wako, kile unachofanya kuzuia magonjwa, huduma za nyumbani mtoto anapokua mgonjwa na wakati unapoamua kumpeleka mtoto hospitalini. Tuta soma recodi ya afya ya mtoto ili tu kusanye mambo kuhusu chanjo zenye mtoto amepata. Tutayaandika majibu yako na mambo kuhusu chanjo zenye mtoto amepata kutoka recodi ya afya ya mtoto wako. Habari tutakayo pata kwako itakuwa ya siri na itafungiwa kwenye kabati. Mhojaji na mtafiti pekee ndio watakaoziona. Habari yote itafutwa miaka 3 baada ya utafiti huu.

Maadhara ya kushiriki kwa utafiti:

Utafiti huu hauna madhara yoyote. Hata hivyo, waweza kuhisi aibu au wasiwasi unapoengea juu yako wewe mwenyewe, kaya yako na mazoea ya familia yako. Washauri wanapatikana wakati wa utafiti wanaoweza kukusaidia kukabiliana na hisia au maswali unazokua nazo.Ingawa tutaandika sababu kukuhusu, hakuna mtu mwingine yeyote atakayoisoma habari hii isipokuwa wale wanaohusika moja kwa moja na utafiti huu.

Faida:

Faida ya utafiti huu kwako utakua kusisitisha mazoea bora ya familia ya kuzuia magonjwa ya watoto na kubaini pengo ya maarifakatika mazoea yako ya kila siku na kujaza pengo haya. Kwa jamii**,** kwa kushiriki kwako katika utafiti huu na kujibu maswali, utasaidia kuongeza kueleweka kwa matakwa kuhusu njia za kusambaza habari zinazofaa ili kuzuia magonjwa na vifo vya watoto. Lakini, hakuna faida binafsi kwa mtoto wako.

Gharama za utafiti:

Kushiriki katika utafiti huu hauta kugharimu malipo yoyote kwa taratibu zote utakazofanyiwa.

Majeraha yanayotokana na uchunguzi:

Hakuna uwezo wowote wa kupata majeraha ya kimwili wakati wa utafiti huu. Lakini, ukijeruhiwa kimwili wakati wa ushiriki wako na utafiti huu watafiti watakupa huduma unaohitaji mara moja. Hakuna fedha ya fidia kwenye mpango huu au aina yoyote ya fidia ya majeraha haya. Hauta poteza haki yako ya kisheria kwa kutia sahihi kwenye fomu hii ya idhini.

Siri:

Recodi za utafiti zitahifadhiwa kwa siri. Siri yenyewe itafungiwa kabatini pahali utafiti utapofanyiwa.Siri kamili haiwezi kuhakikishwa. Habari yako ya kibinafsi yaweza kufichuliwa inapohitajiwa na sheria.Hata hivyo, recodi zako za utafiti huenda zikapitwa upya na maafisa kutoka Taasisi ya Dawa za Kitropiki na Magonjwa ya Kuambukizana (ITROMID/KEMRI) au Chuo Kikuu cha Kilimo na Teknologia cha Jomo Kenyatta. Iwapo recodi zitachunguzwa tena, maafisa hawa watahifadhi siri yako. Toleo au mawasilisho yanayotokana na utafiti huu hayatafanya utambulike na yeyote. Matokeo yote yatakayo tumika kwenye ripoti au toleo kutokana na utafiti huu utaripotiwa kwa jumla na hautakuwa na habari yoyote itakayo kubaini.

Hali ya kujitolea kwa utafiti huu:

Utafiti huu ni wa kujitolea kwa hiari. Una ruhusa kwa kutoshiriki ama kukataa kujibu swali lolote lile. Ukibadilisha nia yako ya kushiriki, una ruhusa ya kujiondoa wakati wowote.Iwapo kuna jambo lisiloeleweka, ama ukihitaji habari zaidi tutakujiza. Uamuzi wako wa kushiriki au kutoshiriki katika utafiti huu hautaadhiri uhusiano wako na hospitali hii pamoja na taasisi nyingine ambazo zimehusika sasa hivi au baadaye. Ukiamua kushiriki, una uhuru wa kujiondoa wakati wowote bila kuadhiri uhusiano huo.

Anwani na maswali:

Mtafiti ni Vicky C. Maiyo. Unaweza kuuliza maswali sasa au baadaye. Nambari yake ni: 0724-065667, barua pepe: vicky@i-kart.biz

Iwapo unamaswali yoyote kuhusiana na utafiti huu na ungependa kuongea na mtu mwingine isipokuwa mtafiti au watafiti, unaweza kuwasiliana na:

Karani, KEMRI National Ethical Review Committee,

Sanduku la posta 54840-00200,

Nairobi, KENYA

Simu: (254) 020-2722541, 0722-205901 na 0733-400003

Barua pepe: erc@kemri.org

Utapewa nakala ya fomu hii ili uihifadhi kama rekodi yako.

SEHEMU YA B: FOMU YA KUTOA IDHINI

Tafadhali soma ujumbe kwenye karatasi (SEHEMU YA A) au usomewe kwa makini kabla ya kujaza na kutia sahihi kwenye fomu hii. Iwapo una maswali yoyote kuhusu utafiti huu, tafadhali muulize mchunguzi kabla ya kutia sahihi kwenye fomu ya kutoa idhini.

Uamuzi wa aliyejitolea:

Mimi Binti/ Bi, ……natoa idhini kwa Vicky C. Maiyo anishirikishe kwenye utafiti wa sababu zinazoshawishi matumizi ya mkakati wa IMCI katika kliniki ya akina mama na watoto na upangaji uzazi ulioko hospitali ya Pumwani Maternity, Kenya. Nimesoma ujumbe wote kuhusu utafiti huu, ninaelewa lengo lake na wajibu wangu iwapo nitashirikishwa. Nimeelezwa hatari na faida zozote zile iwapo zipo no maswali yangu yote yamejibiwa.

Nimeelewa kuwa naweza kijiondoa kwenye utafiti huu wakati wowote bila kutoa sababu zangu na pasi na kuhatarisha kupokea kwangu matibabu na ushauri wa kawaida.

Naelewa kwamba nitahojiwa mara moja. Nakubali kwa hiari yangu kushiriki katika utafiti huu.

Jina la mhojiwa……..…

Sahihi au alama ya kidole gumba……..……...…

Tarehe……..….

Jina la anayepewa ruhusa…….……

Sahihi……..Tarehe……...

Jina la mtafiti……

Sahihi ya mtafiti……Tarehe……...……

Appendix 8: Consent Form for Focused Group Discussion (English)

TITLE OF STUDY:

FACTORS THAT INFLUENCE THE UPTAKE OF THE INTEGRATED MANAGEMENT OF CHILDHOOD ILLNESSES (IMCI) STRATEGY AMONG MOTHERS AT THE MCH/FP CLINIC AT PUMWANI MATERNITY HOSPITAL, KENYA.

Researcher	Institution	Contact
Vicky C. Maiyo	ITROMID-JKUAT	0724-065667
Dr. Peter Wanzala	CPHR-KEMRI	0721-624374
Dr. Kenneth Ngure	JKUAT	0722-362219

PART A

This study is being conducted by Vicky C. Maiyo from the Institute of Tropical Medicine and Infectious Diseases, Jomo Kenyatta University of Agriculture and Technology.

You are invited to participate in a study on the Factors that influence the uptake of the Integrated Management of Childhood Illnesses (IMCI) strategy among mothers at the MCH/FP clinic at Pumwani Maternity Hospital, Kenya. The objective of this study is to determine the factors that influence the uptake of the Integrated Management of Childhood Illnesses (IMCI) strategy among mothers at the MCH/FP clinic at Pumwani Maternity Hospital, Kenya. You have been selected as a possible participant in this study. We ask that you read this form and ask any questions you may have before agreeing to be in the study.

Purpose of the study

To determine the factors that influence the uptake of the Integrated Management of Childhood Illnesses (IMCI) strategy at the MCH/FP clinic at Pumwani Maternity Hospital, Kenya.

Study Procedures

If you agree to take part in this study:

This will be a group session to discuss some questions with other people who are participating in this study.We shall ask you to discuss factors influencing and challenges encountered in some of your family practices including; your child feeding practices, your disease prevention practices, your home based care practices and your care seeking practices. We shall note your answers on paper and audiotape. The session will be audio-taped, and the audio-tapes transcribed, to ensure accurate reporting of the information you provide.

Transcribers will sign a form stating that they will not discuss any item on the tape with anyone other than the researchers. No one's name will be asked or revealed during the discussion. The information that you will provide and will be collected during the study will be kept confidential and locked in cabinets before and after being transcribed. Only the interviewer and the researcher will have access to the data collected during the discussion. The tapes will be destroyed within 2 weeks of completing the transcriptions and the transcriptions wil be destroyed 3 years after the completion of this evaluation.

Risks of Study Participants:

This study has no anticipated risks to the participants. Focus group members will be asked to keep the information provided in the groups confidential; however, a potential risk that might exist would be that information you provide during the discussion might be discussed outside the group by other participants and be traced back to you. If this is a potential issue for you, you are encouraged to withdraw from the group discussion.

Benefits:

The potential benefits of the study to you will include reiteration of ideal family practices in prevention of common childhood illnesses and identifying any knowledge gaps in your current daily family practice and filling these gaps. The benefits to society for your participation in this study and answering our questions, will help be to increase our understanding of the needs regarding effective health promotion to reduce child mortality and morbidity. However, there will be no direct benefits your children.

Study costs:

Taking part in this study will not involve any payment for those procedures we perform.

Research related injury:

There are almost no chances of you getting an injury in the course of our study.However,if you are physically injured as a result of participating in this study the study staff will give you immediate necessary treatment for your injuries. There is no program monetary compensation or other forms of compensation for such injuries. You do not give up any legal rights by signing this consent form.

Confidentiality:

If you choose to participate, you will not be asked your name at the discussion and you will not need to use your name in the discussion. If by chance, you or someone you know addresses you by name during the sessions, the transcriber will be instructed to delete all names from the transcription. The records of this study will be kept confidential. The privacy will be enhanced by use of a lockable cabinet at the study site. Absolute confidentiality

cannot be guaranteed. Your personal information may be disclosed if required by law. However, your record for the study may be reviewed by officials from the Institute of Tropical Medicine and Infectious Diseases (ITROMID, KEMRI) or Jomo Kenyatta University of Agriculture and Technology. If the records are reviewed, the officials will protect your privacy. There will however be no names attached to the tapes or transcriptions. Any publications or presentations arising from this study will not include any information that will make it possible to identify you as a subject. All findings used in any written reports or publications which result from this study will be reported in aggregate form with no identifying information. It is however useful to use direct quotes to more clearly capture the meanings in reporting the findings from this form of procedure. You will be asked at the end of the discussion if there is anything you said which you don't want included as a quote, and we will ensure it is not used.

Voluntary nature of the study:

Participation in this study is voluntary. You have the right to refuse to participate or to answer any question that you feel is uncomfortable with you. If you change your mind, you have the right to withdraw at any time. If anything is not clear or if you need any further information, we shall provide it to you. Your decision whether or not to participate in this study will not affect your current or future relations with this hospital or the other institutions involved. If you decide to participate, you are free to withdraw at anytime without affecting those relationships.

Contacts and questions:

The researcher conducting this study is Vicky C. Maiyo. You may ask any questions you have now, or if you have questions later, you are encouraged to contact her through telephone number: 0724-065667, e-mail: vicky@i-kart.biz

If you have any questions or concerns regarding the study and would like to talk to someone other than the researcher(s), you are encouraged to contact the following:

The Secretary, KEMRI Ethics Review Committee,

P.O. Box 54840-00200,

Nairobi, KENYA

Tel: (254) 020-2722541, 0722-205901 and 0733-400003

Email: erc@kemri.org

You will be given a copy of this form for you records.

PART B: CONSENT FORM

Please read the information sheet (PART A) or have the information read to you carefully before completing and signing this consent form. If there are any questions you have about the study, please feel free to ask them to the investigator prior to signing your consent.

Declaration of the volunteer:

I Miss/ Mrs …… hereby give consent to Vicky C. Maiyo to include me in the proposed study entitled Factors that influence the uptake of the IMCI strategy among mothers at the MCH/FP at Pumwani Maternity Hospital. I have read the information sheet concerning this study, I understand the aim of this study and what will be required of me if I take part in the study. The risks and benefits if any have been explained to me. Any questions I have concerning the study have been adequately answered.

I understand that at any time that I may wish to withdraw from this study I can do so without giving any reason and without affecting my access to normal health care and management.

I realize that I will be interviewed once. I consent voluntarily to participate in this study.

Subject'sname……..……

Signature or left thumb print……..…….

Date……..……

Name of person taking consent…….…...

Signature……...….. Date……...…….

Name of investigator……

Signature of investigator ……..…… Date……...…….

Appendix 9: Consent Form for Focused Group Discussion (Swahili)

MADA YA UTAFITI:

SABABU ZINAZOSHAWISHI MATUMIZI YA MKAKATI WA IMCI KATI YA AKINA MAMA KATIKA KLINIKI YA AKINA MAMA NA WATOTO NA UPANGAJI UZAZI ULIOKO HOSPITALI YA PUMWANI MATERNITY, KENYA.

Mtafiti	**Taasisi**	**Wasiliana**
Vicky C. Maiyo	ITROMID-JKUAT	0724-065667
Dr. Peter Wanzala	CPHR-KEMRI	0721-624374
Dr. Kenneth Ngure	JKUAT	0722-362219

SEHEMU YA A

Utafiti huu unafanywa na Vicky C. Maiyo wa Taasisi ya Dawa za Kitropiki na Magonjwa ya Kuambukizana, Chuo kikuu cha Kilimo na Technologia cha Jomo Kenyatta.

Umealikwa kushiriki katika utafiti huu wa sababu zinazoshawishi matumizi ya mkakati wa IMCI kati ya akina mama katika kliniki ya akina mama na watoto na upangaji uzazi ulioko hospitali ya Pumwani Maternity, Kenya. Lengo la utafiti huu ni kugundua sababu zinazoshawishi matumizi ya mkakati wa IMCI kati ya akina mama katika kliniki ya akina mama na watoto na upangaji uzazi ulioko hospitali ya Pumwani Maternity, Kenya. Umechaguliwa kama mshiriki katika utafiti huu. Tunakuomba usome fomu hii na uulize maswali yoyote kabla ya kukubali kushiriki katika utafiti huu.

Sababu ya utafiti

Kutambua sababu zinazoshawishi matumizi ya mkakati wa IMCI katika kliniki ya akina mama na watoto na upangaji uzazi ulioko hospitali ya Pumwani Maternity, Kenya.

Mkakati wa utafiti:

Iwapo utakubali kushiriki katika utafiti huu:

Huu utakua kikao cha kikundi kujadiliana maswali na washiriki wengine wa utafiti huu. Tuta kuuliza ujadiliane kuhusu sababu zinazosababisha na changamoto unazopata katika mazoea ya familia kama vile unavyolisha mtoto wako, kile unachofanya kuzuia magonjwa, huduma za nyumbani mtoto anapokua mgonjwa na wakati unapoamua kumpeleka mtoto hospitalini. Tutayaandika na kurecodi majibu yako. Kikao kitarecodiwa na recodi hio itanakiliwa ili tuhakikishe habari utakao toa ni ripoti ya kweli. Watao nakili recodi hizo watasahihisha fomu inayosema kuwa hawata jadiliana kitu chochote katika recodi na mto yoyote ila watafiti tu.

Hakuna jina la mtu wowote litalo ulizwa au tajwa katika mjadiliano. Habari tutakazo zipata kwako zitakuwa za siri na zitafungiwa kwenye kabati kabla na baada ya kunakiliwa. Mhojaji na mtafiti pekee ndio watakazoziona. Recodi hizo zitaharibiwawiki 2 baada ya kunakiliwa na nakili hizo, baada ya miaka 3 tukisha kamilisha utafiti huu.

Maadhara ya kushiriki kwa utafiti:

Utafiti huu hauna madhara yoyote kwa watakaoshiriki. Washiriki wa mjadala watahimizwa kuweka habari yoyote itayotolewa kwa kikundi kwa siri; lakini dhara linalowazekana ni kwamba habari utakayo toa wakati wa mjadala yanaweza kujadiliwa nje ya kikundi na washiriki wengine na yanaweza kuelekezwa kwako. Iwapo hii ni suala la maana kwako, unahimizwa ujitoe kwenye kikundi hiki cha mjadiliano.

Faida:

Faida ya utafiti huu kwako utakua kusisitisha mazoea bora ya familia ya kuzuia magonjwa ya watoto na kubaini pengo la maarifakatika mazoea yako ya kila siku na kujaza pengo haya. Kwa jamii**,** kwa kushiriki kwako katika utafiti huu na kujibu maswali, utasaidia kuongeza kueleweka kwa matakwa kuhusu njia za kusambaza habari zinazofaa ili kuzuia magonjwa na vifo vya watoto. Lakini, hakuna faida binafsi kwa mtoto wako.

Gharama za utafiti:

Kushiriki katika utafiti huu hauta kugharimu malipo yoyote kwa taratibu zote utakazofanyiwa.

Majeraha yanayotokana na uchunguzi:

Hakuna uwezo wowote wa kupata majeraha ya kimwili wakati wa utafiti huu. Lakini, ukijeruhiwa kimwili wakati wa ushiriki wako na utafiti huu watafiti watakupa huduma unazohitaji mara moja. Hakuna fedha ya fidia kwenye mpango huu au aina yoyote ya fidia ya majeraha haya. Hauta poteza haki yako ya kisheria kwa kutia sahihi kwenye fomu hii ya idhini.

Siri:

Iwapo utashiriki, hautaulizwa jina lako wakati wa mjadala na hakutakuwa na haja ya kutumia jina lako wakati wa mjadala. Kwa bahati mbaya, iwapo wewe ua mtu unaomfahamu akutajekwa jina lako wakati wa mjadala, atakaye nakili recodi atapewa amri ya kutoa jina lako kwa nakili. Recodi za utafiti zitahifadhiwa kwa siri. Siri yenyewe itafungiwa kabatini pahali utafiti huu utakapofanyika.Siri kamili haiwezi kuhakikishwa. Habari yako ya kibinafsi yaweza kufichuliwa inapohitajiwa na sheria.Hata hivyo recodi zako za utafiti huenda zikapitwa upya na maafisa kutoka Taasisi ya Dawa za Kitropiki na Magonjwa ya Kuambukizana (ITROMID/KEMRI) au Chuo Kikuu cha Kilimo na Teknologia cha Jomo

Kenyatta. Iwapo recodi zitachunguzwa tena, maafisa hawa watahifadhi siri yako. Hakutakuwa na majina yoyote kwenye mkanda au unakili. Toleo au mawasilisho yanayotokana na utafiti huu hayatafanya utambulike na yeyote. Matokeo yote yatakayo tumika kwenye ripoti au toleo kutokana na utafiti huu utaripotiwa kwa jumla na hayatakuwa na habari yoyote itakayo kubaini. Hata hivyo, inasaidia kutumia kunukuu ilikukamata wazi maana kamili kwenye kuripoti matokeo kutokana na utaratibu huu. Utaulizwa baada ya mjadala kama kuma tamshi lolote lenye hutaki liwekwe kama kunukuu, na tutahakikisha halita tumiwa.

Hali ya kujitolea kwa utafiti huu:

Utafiti huu ni wa kujitolea kwa hiari. Una ruhusa kwa kutoshiriki ama kukataa kujibu swali lolote lile. Ukibadilisha nia yako ya kushiriki, una ruhusa ya kujiondoa wakati wowote.Iwapo kuna jambo lisiloeleweka, ama ukihitaji habari zaidi tutakujiza. Uamuzi wako wa kushiriki au kutoshiriki katika utafiti huu hautaadhiri uhusiano wako na hospitali hii pamoja na taasisi nyingine ambazo zimehusika sasa hivi au baadaye. Ukiamua kushiriki, una uhuru wa kujiondoa wakati wowote bila kuadhiri uhusiano huo.

Anwani na maswali:

Mtafiti ni Vicky C. Maiyo. Unaweza kuuliza maswali sasa au baadaye. Nambari yake ni: 0724-065667, barua pepe: vicky@i-kart.biz

Iwapo unamaswali yoyote kuhusiana na utafiti huu na ungependa kuongea na mtu mwingine isipokuwa mtafiti au watafiti, unaweza kuwasiliana na:

Karani, KEMRI National Ethical Review Committee,

Sanduku la posta 54840-00200,

Nairobi, KENYA

Simu: (254) 020-2722541, 0722-205901 na 0733-400003

Barua pepe: erc@kemri.org

Utapewa nakala ya fomu hii ili uihifadhi kama rekodi yako.

SEHEMU YA B: FOMU YA KUTOA IDHINI

Tafadhali soma ujumbe kwenye karatasi (SEHEMU YA A) au usomewe kwa makini kabla ya kujaza na kutia sahihi kwenye fomu hii. Iwapo una maswali yoyote kuhusu utafiti huu, tafadhali muulize mchunguzi kabla ya kutia sahihi kwenye fomu ya kutoa idhini.

Uamuzi wa aliyejitolea:

Mimi Binti, Bi, …… natoa idhini kwa Vicky C. Maiyo anishirikishe kwenye utafiti wa sababu zinazoshawishi matumizi ya mkakati wa IMCI katika kliniki ya akina mama na watoto na upangaji uzazi ulioko hospitali ya Pumwani Maternity, Kenya. Nimesoma ujumbe wote kuhusu utafiti huu, ninaelewa lengo lake na wajibu wangu iwapo nitashirikishwa. Nimeelezwa hatari na faida zozote zile iwapo zipo no maswali yangu yote yamejibiwa.

Nimeelewa kuwa naweza kijiondoa kwenye utafiti huu wakati wowote bila kutoa sababu zangu na pasi na kuhatarisha kupokea kwangu matibabu na ushauri wa kawaida.

Naelewa kwamba nitahojiwa mara moja. Nakubali kwa hiari yangu kushiriki katika utafiti huu.

Jina la mhojiwa……..…

Sahihi au alama ya kidole gumba……..……..…….

Tarehe……...…

Jina la anayepewa ruhusa…….……

Sahihi…….……..Tarehe……..

Jina la mtafiti……...….

Sahihi ya mtafiti……Tarehe……...…

Appendix 10: Consent Form for Key Informant Interviews

TITLE OF STUDY:

FACTORS THAT INFLUENCE THE UPTAKE OF THE INTEGRATED MANAGEMENT OF CHILDHOOD ILLNESSES (IMCI) STRATEGY AMONG MOTHERS AT THE MCH/FP CLINIC AT PUMWANI MATERNITY HOSPITAL, KENYA.

Researcher	Institution	Contact
Vicky C. Maiyo	ITROMID-JKUAT	0724-065667
Dr. Peter Wanzala	CPHR-KEMRI	0721-624374
Dr. Kenneth Ngure	JKUAT	0722-362219

PART A

This study is being conducted by Vicky C. Maiyo from the Institute of Tropical Medicine and Infectious Diseases, Jomo Kenyatta University of Agriculture and Technology.

You are invited to participate in a study on the Factors that influence the uptake of the Integrated Management of Childhood Illnesses (IMCI) strategy among mothers at the MCH/FP clinic at Pumwani Maternity Hospital, Kenya. The objective of this study is to determine the factors that influence the uptake of the Integrated Management of Childhood Illnesses (IMCI) strategy among mothers at the MCH/FP clinic at Pumwani Maternity Hospital, Kenya. You have been selected as a possible participant in this study. We ask that you read this form and ask any questions you may have before agreeing to be in the study.

Purpose of the study

To determine the factors that influence the uptake of the Integrated Management of Childhood Illnesses (IMCI) strategy at the MCH/FP clinic at Pumwani Maternity Hospital, Kenya.

Study Procedures

If you agree to take part in this study:

We shall ask you to questions regarding your knowledge and views on the IMCI strategy that is currently being used. We shall note your answers on paper and audio-tape. The session will be audio-taped, and the audio-tapes transcribed, to ensure accurate reporting of the information you provide. Transcribers will sign a form stating that they will not discuss any item on the tape with anyone other than the researchers. The information that you will provide and will be collected during the study will be kept confidential and locked in cabinets

before and after being transcribed. Only the interviewer and the researcher will have access to the data collected during the discussion. The tapes will be destroyed within 2 weeks of completing the transcriptions and the transcriptions will be destroyed 3 years after the completion of this evaluation.

Risks of Study Participants:

This study has no anticipated risks to the participants. Although we shall write your details on paper, no other person will be allowed to read this information except the ones directly involved in this study.

Benefits:

The potential benefits of the study to you will include having an opportunity to describe your experience with the IMCI strategy in your practice and to clarify and validate your current knowledge and practices. The benefits to society of your participation in this study and answering our questions, will be to help increase our understanding of the needs regarding effective health promotion to reduce child mortality and morbidity.

Study costs:

Taking part in this study will not involve any payment for those procedures we perform.

Research related injury:

There are almost no chances of you getting an injury in the course of our study.However,if you are physically injured as a result of participating in this study the study staff will give you immediate necessary treatment for your injuries. There is no program monetary compensation or other forms of compensation for such injuries. You do not give up any legal rights by signing this consent form.

Confidentiality:

If you choose to participate, you will not be asked your name during the interview and you will not need to use your name in the interview. If by chance, your name is mentioned during the interview, the transcriber will be instructed to delete all names from the transcription. Absolute confidentiality cannot be guaranteed. Your personal information may be disclosed if required by law. However, your record for the study may be reviewed by officials from the Institute of Tropical Medicine and Infectious Diseases (ITROMID, KEMRI) or Jomo Kenyatta University of Agriculture and Technology. If the records are reviewed, the officials will protect your privacy. There will however be no names attached to the tapes or transcriptions. Any publications or presentations arising from this study will not include any information that will make it possible to identify you as a subject. All findings used in any written reports or publications which result from this study will be reported in aggregate form

with no identifying information. It is however useful to use direct quotes to more clearly capture the meanings in reporting the findings from this form of procedure. You will be asked at the end of the discussion if there is anything you said which you don't want included as a quote, and we will ensure it is not used.

Voluntary nature of the study:

Participation in this study is voluntary. You have the right to refuse to participate or to answer any question that you feel is uncomfortable with you. If you change your mind, you have the right to withdraw at any time. If anything is not clear or if you need any further information, we shall provide it to you. Your decision whether or not to participate in this study will not affect your current or future relations with this hospital or the other institutions involved. If you decide to participate, you are free to withdraw at anytime without affecting those relationships.

Contacts and questions:

The researcher conducting this study is Vicky C. Maiyo. You may ask any questions you have now, or if you have questions later, you are encouraged to contact her through telephone number: 0724-065667, e-mail: vicky@i-kart.biz

If you have any questions or concerns regarding the study and would like to talk to someone other than the researcher(s), you are encouraged to contact the following:

The Secretary, KEMRI Ethics Review Committee,
P.O. Box 54840-00200,
Nairobi, KENYA
Tel: (254) 020-2722541, 0722-205901 and 0733-400003
Email: erc@kemri.org

You will be given a copy of this form for you records.

PART B: CONSENT FORM

Please read the information sheet (PART A) or have the information read to you carefully before completing and signing this consent form. If there are any questions you have about the study, please feel free to ask them to the investigator prior to signing your consent.

Declaration of the volunteer:

I Mr/ Mrs/ Miss …… hereby give consent to Vicky C. Maiyo to include me in the proposed study entitled Factors that influence the uptake of the IMCI strategy among mothers at the MCH/FP at Pumwani Maternity Hospital. I have read the information sheet concerning this study, I understand the aim of this study and what will be required of me if I take part in the study. The risks and benefits if any have been explained to me. Any questions I have concerning the study have been adequately answered.

I understand that at any time that I may wish to withdraw from this study I can do so without giving any reason and without affecting my relations with this hospital.

I realize that I will be interviewed once. I consent voluntarily to participate in this study.

Subject'sname……...……...…

Signature…….Date……..……

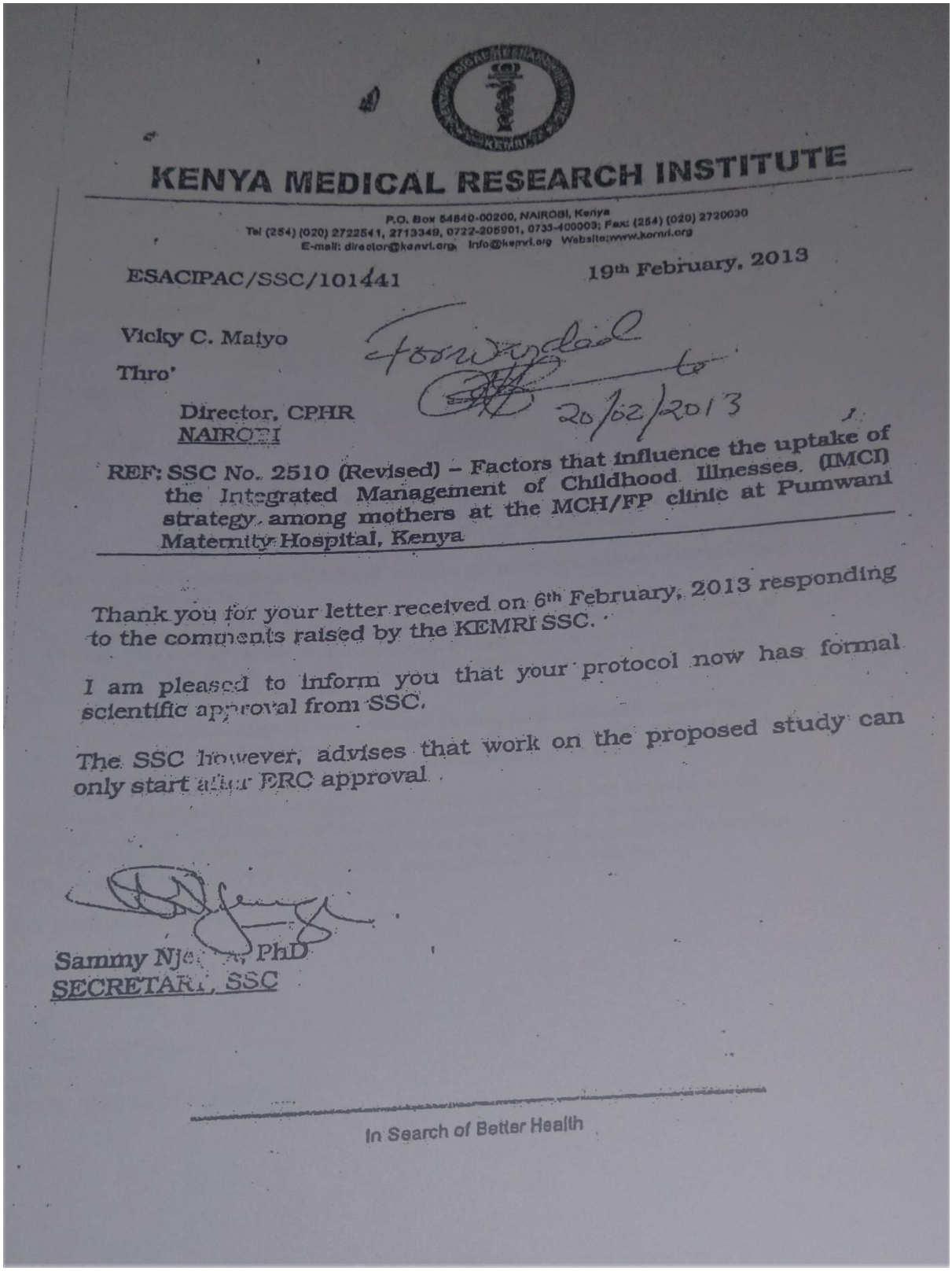
Name of person taking consent……...…….…

Signature…….…….. Date……...…

Name of investigator……..……..

Signature…….……..…….Date……..….

Appendix 11: Ethical Clearance from Scientific Steering Committee



KENYA MEDICAL RESEARCH INSTITUTE

P.O. Box 54840-00200, NAIROBI, Kenya
Tel (254) (020) 2722541, 2713349, 0722-205901, 0733-400003; Fax: (254) (020) 2720030
E-mail: director@kemri.org Info@kemri.org Website:www.kemri.org

ESACIPAC/SSC/101441 19th February, 2013

Vicky C. Maiyo
Thro'
Director, CPHR
NAIROBI

Forwarded to
20/02/2013

REF: SSC No. 2510 (Revised) – Factors that influence the uptake of the Integrated Management of Childhood Illnesses. (IMCI) strategy among mothers at the MCH/FP clinic at Pumwani Maternity Hospital, Kenya

Thank you for your letter received on 6th February, 2013 responding to the comments raised by the KEMRI SSC.

I am pleased to inform you that your protocol now has formal scientific approval from SSC.

The SSC however, advises that work on the proposed study can only start after ERC approval.

Sammy Nj[illegible], PhD
SECRETARY, SSC

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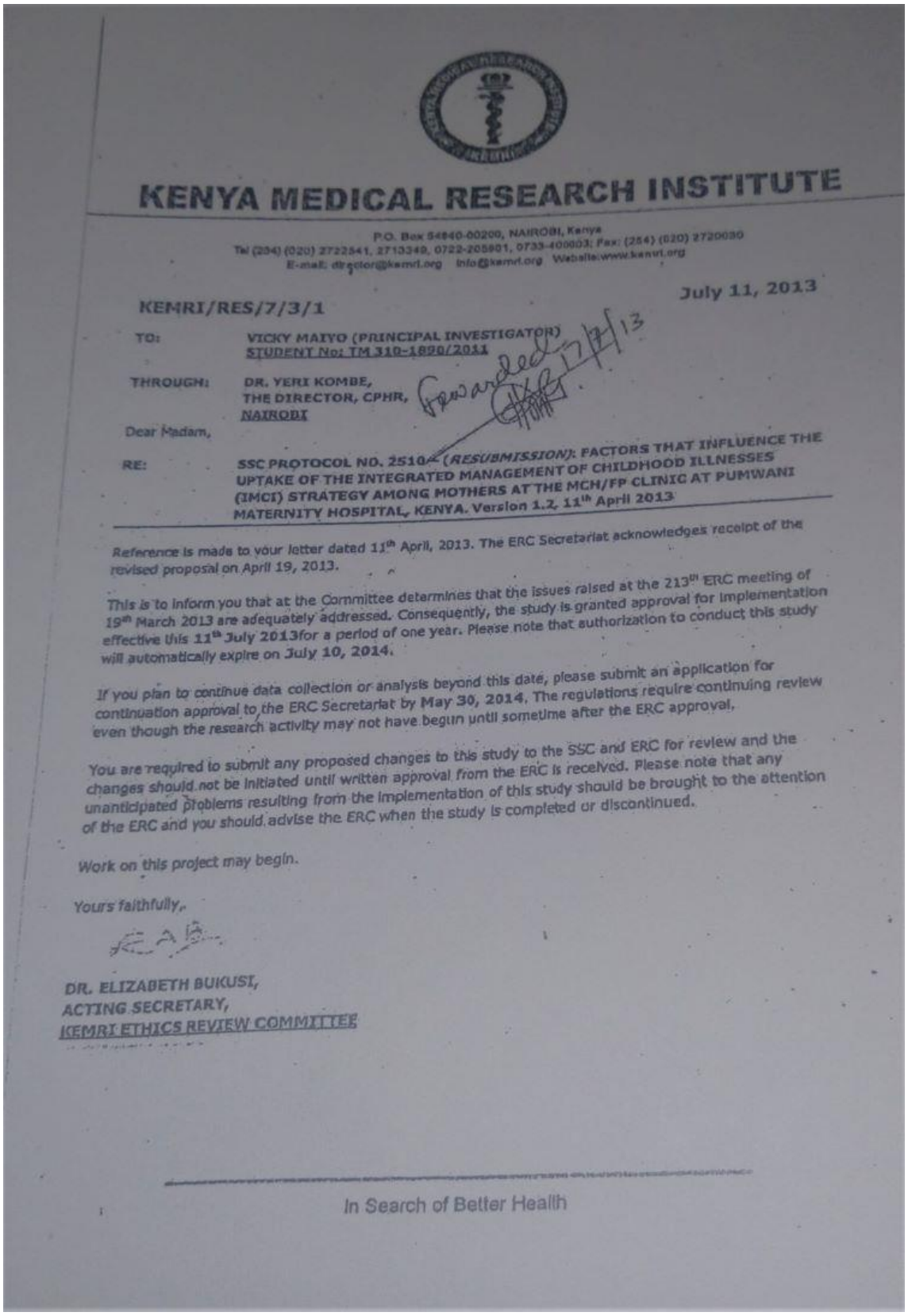
Appendix 12: Ethical Clearance from Ethical Riview Committee



KENYA MEDICAL RESEARCH INSTITUTE

P.O. Box 54840-00200, NAIROBI, Kenya
Tel (254) (020) 2722541, 2713349, 0722-205901, 0733-400003; Fax: (254) (020) 2720030
E-mail: director@kemri.org info@kemri.org Website:www.kemri.org

July 11, 2013

KEMRI/RES/7/3/1

TO: VICKY MAIYO (PRINCIPAL INVESTIGATOR)
STUDENT No: TM 310-1890/2011

THROUGH: DR. YERI KOMBE,
THE DIRECTOR, CPHR,
NAIROBI

Forwarded 17/7/13

Dear Madam,

RE: SSC PROTOCOL NO. 2510 *(RESUBMISSION)*: FACTORS THAT INFLUENCE THE UPTAKE OF THE INTEGRATED MANAGEMENT OF CHILDHOOD ILLNESSES (IMCI) STRATEGY AMONG MOTHERS AT THE MCH/FP CLINIC AT PUMWANI MATERNITY HOSPITAL, KENYA. Version 1.2, 11th April 2013

Reference is made to your letter dated 11th April, 2013. The ERC Secretariat acknowledges receipt of the revised proposal on April 19, 2013.

This is to inform you that at the Committee determines that the issues raised at the 213th ERC meeting of 19th March 2013 are adequately addressed. Consequently, the study is granted approval for implementation effective this 11th July 2013for a period of one year. Please note that authorization to conduct this study will automatically expire on July 10, 2014.

If you plan to continue data collection or analysis beyond this date, please submit an application for continuation approval to the ERC Secretariat by May 30, 2014. The regulations require continuing review even though the research activity may not have begun until sometime after the ERC approval.

You are required to submit any proposed changes to this study to the SSC and ERC for review and the changes should not be initiated until written approval from the ERC is received. Please note that any unanticipated problems resulting from the implementation of this study should be brought to the attention of the ERC and you should advise the ERC when the study is completed or discontinued.

Work on this project may begin.

Yours faithfully,

DR. ELIZABETH BUKUSI,
ACTING SECRETARY,
KEMRI ETHICS REVIEW COMMITTEE

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