

**DETERMINANTS OF QUALITY OF MATERNAL CHILD
HEALTH SERVICES IN THE TIER 3 PUBLIC HEALTH
FACILITIES OF KISUMU COUNTY AFTER THE
DECLARATION OF FREE MATERNAL HEALTH CARE.**

By

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ABBREVIATIONS

ANC	Ante Natal Clinic
BCG	Bacillus Calmette-Guerin
DHIS	District Health Information System
FGD	Focused Group Discussion
JOOTRH	Jaramogi Odinga Oginga Teaching and Referral Hospital
KIHBS	Kenya Integrated Household Budget Survey
KII	Key Informant Interview
MDG	Millennium Development Goals
MNCH	Maternal Neonatal and Child Health
MOH	Ministry of Health
TBAs	Traditional Birth Attendants
CRH	County Referral Hospital
SCRH	Sub-County Referral Hospital
FBO	Faith Based Organizations
TIER 3 FACILITIES	All County and Sub-County referral Hospitals

M A S E N O U N I V E R S I T Y
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ABSTRACT

The goal of service delivery of any government is to provide quality essential priority health packages that are acceptable, affordable and accessible to all its citizens. The declaration of free maternal Health Care services by the National Government of Kenya is a positive step to fulfilling the affordability and to some extent accessibility aspects of Maternal and Child health service delivery. Kisumu County still has the highest proportion of mothers dying in the post-partum period with Maternal Mortality ratio at 597 per 100,000 live births, hospital delivery at 45.6% and immunization coverage at 68.6%. The determinants of Maternal Newborn Child Health (MNCH) services in Kisumu County Tier 3 health facilities are less understood as universal uptake of these services have not been realized especially the link between high post-partum deaths and high HIV prevalence. Most health facilities in Kisumu County are poorly equipped with the MNCH facilities; health staff are few and overburdened by the high admissions due to soaring disease incidences in the region. The current study therefore proposes to establish the determinants of quality of maternal and child health services offered in the Tier 3 Public health facilities within Kisumu County in the face of free Maternal Health care services in Kenya. A descriptive cross section design will be adopted and the Study population will be mothers attending the MNCH Clinic and Health Care Workers. Quantitative data will be collected using structured questionnaires while qualitative data using Focused Group Discussion and Key Informant Interviews of MNCH Health Workers and Facility in-charges respectively, a total of 1033 mothers with 2+ ANC visit will be sampled randomly. Quantitative data arising from the study will be analyzed using Statistical Package for Social Sciences. Univariate statistics will be used to assess patterns of responses to the questionnaire items and matched to themes emerging from the FGDs. Chi-square (χ^2) tests will be used to assess differences between categories and P-values of less than 0.02 will be considered significant. The findings of the study will highlight on health service provision strategies that will improved quality of MNCH services not only in Kisumu County but also in other health care facilities in the country.

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CHAPTER ONE: INTRODUCTION

1.1 Background Information

Healthcare quality indicators are an important tool that is basically meant to evaluate the performance of a health system. A healthcare system, therefore, is a set of activities and actors whose principal goal is to improve health through the provision of public and personal medical services (Anderson and Hussey, 2001). Bruce and Jain, 1990 defined quality as “the way individuals and clients are treated by the system providing sought for services. This definition befits a definition of healthcare service provision in MNCH clinics in the health facilities in Kenya. The quality framework identifies six elements that are fundamental in the measurements of clinical quality as: choice to the health service to be provided, information given to patients, technical competence, inter-personal relationships, continuity and follow-up, and the appropriate assemblage of services (Population Reference Bureau, 2002).

According to Kelley and Hurst, (2006), quality of care can be gauged by its effectiveness, safety and responsiveness or patients centered. Healthcare here, therefore, is defined as the combined functioning of public health and personal medical services. However, quality of care highly depends on access, cost, efficiency and equity for health. It is also determined by health system design, policy and context; non-healthcare determinants of health and overall levels of health. Quality of healthcare can also be influenced by structure; process and outcome, however, effectiveness, safety and responsiveness are critical indicators of healthcare quality (Donabedian, 1980; Mainz, 2003).

In Canada healthcare quality is divided into six dimensions namely: health status, which measures rates of specific health conditions and causes of death and disability. It also measures well-being that helps the government of Canada to understand health of its citizens. The other dimension is the non-medical determinants of health, which measures living conditions, health behaviors, socio-economic factors, and environmental factors. This dimension provides insight into non-medical aspects of life that may impact on health. The third dimension looks at the performance of health system by assessing access to important procedures and services, appropriateness of delivered services, their effectiveness and safety. The fourth dimension concerns

community and health system characteristics, which help the Canadian government to understand the various health issues in the community and the system and finally the fifth dimension is equity, which is concerned with equal opportunity for good health and quality of life (CIHI, 2000).

The Agency for Healthcare Research and Quality (AHRQ) indicators, has divided quality indicators for in - patient into i) volume of admission, ii) mortality indicators for in - patient procedures; iii) mortality indicators for in - patient conditions and iv) utilization indicators. Volume indicators simply look at counts of admissions in which procedures are performed. The interpretation is that high volumes for certain procedures are evident of high quality services and vice versa. Mortality indicators for in - patient procedures looks at procedures for which mortality has been shown to vary and for which there is evidence that high mortality may be associated with poor quality of care. Mortality indicators for in - patient conditions concerns with conditions for which mortality has been shown to vary substantially and for which evidence suggests that high mortality may be associated with deficiencies in the quality of care (AHRQ, 2007).

The US health system performance has been highly rated for cancer case management, moderate for in-hospital case-specific mortality, and though poor on hospital admissions for chronic conditions and amputations due to diabetes (Squires, 2011). OECD, (2009) portrays UK to be performing poorly in in-hospital case-fatality of admission for acute myocardial infarction; hemorrhagic and ischemic stroke.

In Africa, health systems performance cannot compare well with those of developed countries due to a myriad of socio-economic and political instabilities. However, this is exceptional to South Africa where reportedly health systems have adopted the “*Batho Pele – people first*” principles to empower health service users to take control of their own healthcare and that of their families (National Department of Health, 2007). A study in Tanzania associated high volume of clients to good quality healthcare services (Population Reference Bureau, 2002). Since independence, Kenya has continued to design and implement policies aimed at promoting coverage of and access to modern healthcare in an attempt to attain the long-term objectives of health for all. This indeed was a pre-moition of MDGs 4; 5 and 6; however, free delivery for

expectant mothers that was declared in 2013 is a very positive gesture towards attaining MDGs 4 and 5. Nevertheless, the primary objective of the free delivery for expectant mothers can only be achieved if the declaration is coupled with improved infrastructural facilities; staff training and deployment as well as maintaining acceptable quality health service provision process.

In Kenya health facilities are distributed regionally, with the most sophisticated services available in the major cities or only at the national level. At the top of the service spectrum are the National Referral and Teaching Hospitals (NRTH). The next best level of care is found in the County Referral hospitals, followed by sub-County hospitals. Beneath the sub-County level, there are Health centers, Dispensaries, and at the bottom of the heap, Community Health Organizations. Visiting these different facilities, stark disparities are apparent both vertically, between the different levels of care, and also horizontally, from facility to facility. Kisumu County is made up of 7 Sub-Counties; in terms of health facilities the County has Jaramogi Oginga Odinga Teaching and Referral Hospital (JOTRH), one County Referral Hospital, 6 Sub-County Hospitals. Nevertheless, previous reports have depicted the County as one with poorest health indicators. For instance according to Kenya Integrated Household Budget Survey (KIHBS) (2005/06), when grouped by place of delivery only 32.75% of children aged 0 – 59 months were delivered in a hospital; 7.7% were delivered in a health centers, which compares very low with those delivered at home 53.8%. Attendance by service providers was also looked at by level of profession. For instance on average only 14.25 deliveries were assisted by doctors; midwives/nurses assisted 26.55% of all deliveries, 23.1% were assisted by TBAs and self deliveries were 5%. Immunization also performed poorly even though over 90% of those interviewed said they had vaccination cards only 34.6% of children aged 0 – 59 months received all the recommended vaccination: BCG; Polio 1 – 3; DPT 1 – 3 and measles. On childhood diarrhea, 35.0% of children in greater Nyando compared to 15.9% of children from greater Kisumu suffered episodes of diarrhea. According to USAID County Fact Sheets for Kenya (2011), children from Kisumu County delivered in a Health Centre were 45.6%; delivered by qualified Medical Assistant during birth were 46.1% and children who received all vaccinations were 68.6%, which are still way below the MDG targets.

The Kenya Integrated Household Budget Survey (KIHBS), (2005/06) and USAID County Fact Sheets for Kenya. (2013), has portrayed poor health seeking behavior by mothers of 0 – 59 months. It will be interesting to assess the quality and MNCH service uptake in these health facilities.

1.2 Problem Statement

High quality services helps to ensure that clients receive the care that they deserve and that the providers offer the best. It's the responsibility of the Government through the Ministry of Health and other agencies to ensure quality MNCH services is offer to its citizens. This study will consider the case of health facilities in Kisumu County after the declaration of free Maternal Health services. The foreseeable problems with the declaration that expectant mothers attending MNCH clinics should not pay fees at public health facilities whenever they go for health care services can be summarized into i) upsurge in the number of expectant mothers visiting such health facilities for care leading to long queues and prolonged waiting times before one gets the services sort; ii) there will be shortage of the equipment like beds and more worse incubators resulting in sharing of the incubators, which can result in nosocomial infections; iii) there may also be shortage of consumables such as injections; drugs; transfusion blood; IV fluids and even gloves, that are very necessary during delivery. There will be burn out by the skilled birth attendants leading to mothers giving birth unattended to by the skilled personnel. There will also be increased use of interns to assist mothers during delivery. Consequently, there will be inadequacy in terms of structural equipment; slow process of services delivery and poor delivery outcomes like maternal and/or infant deaths during delivery. The declaration of free maternal Health services was meant to increase access of MNCH services, consequently reducing Maternal and Neonatal death, yet Kenya still has poor maternal and Child health indicators even with free MNCH services and Kisumu County has demonstrated one of the poorest maternal indicators hence the reason for this study.

1.3 Justification of the Study

This study is occasioned by the continued poor Maternal Child health indicators despite the free MNCH services offered in the Public Health Facilities. It is hoped that this study will yield data and information that will be useful in establishing the actual determinants of quality MNCH service uptake in the Public Health Facilities, for planning and decision making at the Ministry of Health both in the County and National Government. It will also help in development of a framework for the management actions to ensure internal efficiency. The findings and recommendations of this study will help the health Managers and service providers improve the quality of MNCH services based on research. It will also lead to generation of new ideas for better and more efficient management of MNCH services.

1.4 Objectives

1.4.1 Broad Objective

To find out the determinants of quality Maternal Newborn and Child Health (MNCH) services provided in tier 3 Public Health Facilities of Kisumu County.

1.4.1.1 Specific Objectives

1. To establish the structural aspect that affects the quality of MNCH services in tier 3 Public Health Facilities of Kisumu County.
 2. To determine the health services provisions processes that affect quality of MNCH services in tier 3 public Health Facilities of Kisumu County.
 3. To find out service provider personal attributes that affect quality of MNCH service in tier 3 public Health Facilities of Kisumu County.
 4. To identify socio economic and demographic factors that affect quality of MNCH services in the tier 3 public Health Facilities of Kisumu County.
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1.5 Research Questions

1. What are the structural aspects that affect quality of MNCH services in tier 3 public Health Facilities of Kisumu County?
2. What are the health services provisions processes that affect quality of MNCH services in tier 3 public Health Facilities of Kisumu County?
3. What are the service provider personal attributes that affect quality of MNCH services in tier 3 public Health Facilities of Kisumu County?
4. What are the socio economic and demographic factors that affect quality of MNCH services in tier 3 public Health Facilities of Kisumu County?

1.6 Significance of the Study

This study is significant in that it will highlight the gaps and drivers of quality MNCH services in Public Health Facilities especially at the Counties. It will form an important insight and provide recommendations on what needs to be done to improve the quality of MNCH services and sharing of MNCH best practices in Public health facilities.

1.7 Study Limitations

Some staff in the private sector might not express themselves freely on negative issues affecting their Health Facilities for fear of being reprimanded or victimization.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

In this chapter, the researcher reviews literature related to indicators of quality of healthcare. The review is organized according to the objectives of the study.

2.2 Structural measurements of Quality of Health Care

According to Institute of Medicine, (2011) healthcare quality is defined as “*the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge.*”

Measuring of service quality in healthcare setting is an old concept. Service quality was long categorized by Donabedian, (1980) into: i) structural quality, which refers to quality issues of the structural within a healthcare facility. This can be resources like human labor, materials, technology of information. ii) process quality, which means the manner of service provision and includes individual measures within core and sub processes and iii) outcome quality indicates the results and typically comprises indicators such as customer satisfaction, in order to address any of the stakeholder interests of the service provider.

Structural measures are concrete and usually easy to assess. According to Donabedian, (2003) structural measures would be easy to assess looking at the physical facility, equipment, and human resources, as well as organizational characteristics such as staff training and payment methods. According to Wilson *et al.*, (2007) the other aspect of structural measures of healthcare quality is whether a clinic specializes in particular types of care whereas Hannan *et al.*, (1997) is of the view that structural care can be measured by reviewing the procedures performed within a specified period of time. For instance in the case of MNCH clinics it would be important to know i) the number of skilled birth attendants per 10000 mothers seeking delivery; ii) average number of MNCH clients per single doctor/midwife/nurse; iii) population of MNCH clients per available bed space and delivery room; iv) presence of clinical guidelines for delivery; v) presence of materials such as gloves; placental pit, incinerators etc. vi) finally the number of live births recorded in a given period of service delivery. The presence and functionality of diagnostic laboratory and emergency care unit within MNCH clinic.

The disadvantage in the use of structural measures of quality of healthcare is that often the association between structure and process and/or structure and outcome are not well established and developing evidence for such associations is difficult and often very complex. (Landon *et al.*, (2001).

Dimensions of healthcare performance are defined as measurable and actionable attributes of the system that are related to its functioning to maintain, restore or improve health. Dimensions of health are usually grouped according to those that are most commonly used and those that are less commonly used (EUCERD Report, 2011). This categorization depends on the reliability of measurements that can be arrived at using a particular set of category and also the study participants. For instance dimensions that seek to evaluate technical quality aspects of health can only be understood by participants who have knowledge of such technical quality indicators of health services, for instance the healthcare service providers (Knowles *et al.*, 1997). The most commonly used dimensions of health are i) effectiveness, ii) safety, iii) responsiveness, iv) accessibility, v) equity and vi) efficiency. the less commonly used dimensions of health include i) acceptability, ii) appropriateness, iii) competence or capability, iv) continuity and v) timeliness. However, it is worth noting that the above described dimensions have been used in developed countries.

2.3 Process Measures of Quality of Healthcare

Process is the sum of all actions that make up healthcare. These commonly include diagnosis, treatment, preventive care, and patient education but may be expanded to include actions taken by the patients or their families. Processes can be further classified as technical processes, how care is delivered, or interpersonal processes, which all encompass the manner in which care is delivered. The measurement of process is nearly equivalent to the measurement of quality of care because process contains all acts of healthcare delivery (Donabedian, 2003). Information about process can be obtained from medical records, interviews with patients and practitioners, or direct observations of healthcare visits. For example in a study by Brook and colleagues, (1996) that assessed quality of care received by diabetic patients, the process measures of quality included whether the patient had undergone a fundoscopic

examination by an ophthalmologist or whether the patient's feet were professionally examined. Aldana and colleagues, (2001) established that most patients expected to receive physical examination, advice, or information about their health problem. Process quality measurement criteria are typically developed by first identifying the condition of interest, and then synthesizing research evidence to create evidence based guidelines for clinical care. Once one has identified the part of the medical care process that will be used, one defines patients who are eligible to receive care on the basis of guideline, create criterion to determine which patients received care in accordance with guideline, and divide number who received care in compliance with guideline by number of patients eligible to receive care. The emerging knowledge gaps exist in the use of functional referral systems, ambulance services; surgical procedures like caesarian delivery among others to measure healthcare quality.

Technical aspects of quality of healthcare services is measured by attributes such as assessing the history of the patient such as history of an infections such as malaria, urinary tract infection etc. the diagnostic approaches done on the patient such as blood pressure measurement; checking for haemoglobin and checking urine for albumin as outlined in a study by Boller and colleagues, (2003). Other technical attributes are provision of prophylactic drugs namely Iron (II) sulfate and folic acid. Physical examination of the patient like checking eyes; legs for oedema; weight and fetal heart as well as provision of health education on important maternal health services like general health education; health education for nutrition and health education prevention of malaria.

2.4 Service Providers Attribute

Interpersonal skills measures services provider/client interactions such as communications (Asnani, 2009). Patients' perceptions of the quality of the healthcare they received are highly dependent on the quality of their interactions with their healthcare clinician and team (Wanzer *et al.*, 2004). There is mounting evidence that a structured approach to communication measurably improves healthcare delivery (Duffy *et al.*, 2004). Larson and Yao, (2005) found a direct relationship between clinicians' level of satisfaction and their ability to build rapport and express care and warmth with

patients. Good diagnostic outcomes are positively associated with well-structured interview of disease history. Aldana and colleagues, (2001) were able to reveal that service provider behavior, especially respect and politeness are more important predictors of patient satisfaction and so quality healthcare than technical competence of the provider.

A study by Bolleret *al.*, (2003) revealed that there was a relation between the qualifications of a health service provider and the quality of the services provided in that highly trained personnel performed better in the technical aspects of quality whereas those who were still in their medical training spent a lot of time on investigative services rather than consultation. It therefore suggests that qualification is indeed a great determinant when it comes to quality of healthcare service provision.

The commonly used outcome measures in general practice include waiting times, communications between doctor/nurse and patient, preparing abstraction process of patient records and updating it, interventions performed and counseling of patients with some sort of complications (Jurgutiset *al.*, 2011). In Kenya, highly qualified personnel like doctors are few and this implies that patient: doctor ration is very high and this may affect the quality of services received by individual patients as the doctor would do his duties in a hurry to cover all the patients. This consequently reduces doctor patient consultation time, poor doctor patient communication and in turn may lead to misunderstanding the patients concerns. Outcome contains all the effects of healthcare on patients or populations, including changes to health status, behavior, or knowledge as well as patient satisfaction and health-related quality of life. Outcomes are sometimes seen as the most important indicators of quality because improving patient health status is the primary goal of healthcare

2.5 Socio Economic Factors

According to Stiget *al.*, (2011) the rapidly increasing patient charges particularly affect the weaker social groups and thus pose a threat to the healthcare legislation — that good care should be available to everyone on equal terms. People in poor countries tend to have less access to health services than those in better-off countries, and within countries, the poor have less access to health services. Key ingredients of success

include concerted efforts to reach the poor, engaging communities and disadvantaged people, encouraging local adaptation, and careful monitoring of effects on the poor. Yet governments in developing Countries rarely focus on the poor in their policies or the implementation or monitoring of health service strategies. There are also new innovations in financing, delivery, and regulation of health services that hold promise for improving access to the poor, such as the use of health equity funds, conditional cash transfers and regulation of health services. The challenge remains to find ways to ensure that vulnerable populations have a say in how strategies are developed, implemented, and accounted for in ways that demonstrate improvements in access by the poor. (David *et al.*, 2008).

A study done in Kenya to assess the extent to which ability to pay can be determined by readily obtainable information on patients' socio-economic characteristics. It is shown that these characteristics do predict ability to pay, but not with the degree of accuracy necessary to use as the sole criteria for granting exemptions. Thus, although the evidence from Kenya indicates that the level of outpatient fees could be paid by the majority of the population without undue burden, a minority would require fee exemptions. The main obstacle to implementing a system of exemptions is the inability to easily identify those unable to pay. (Joyce, 2013).

2. 6 Conceptual Framework

The outstanding concept that has not been well researched on is measures of healthcare quality specifically for delivery and child birth. This could be due to a misconception that pregnancy and child birth is not a disease. A modified conceptual framework for the study will be based on a framework proposed by Donabedian, (1980).

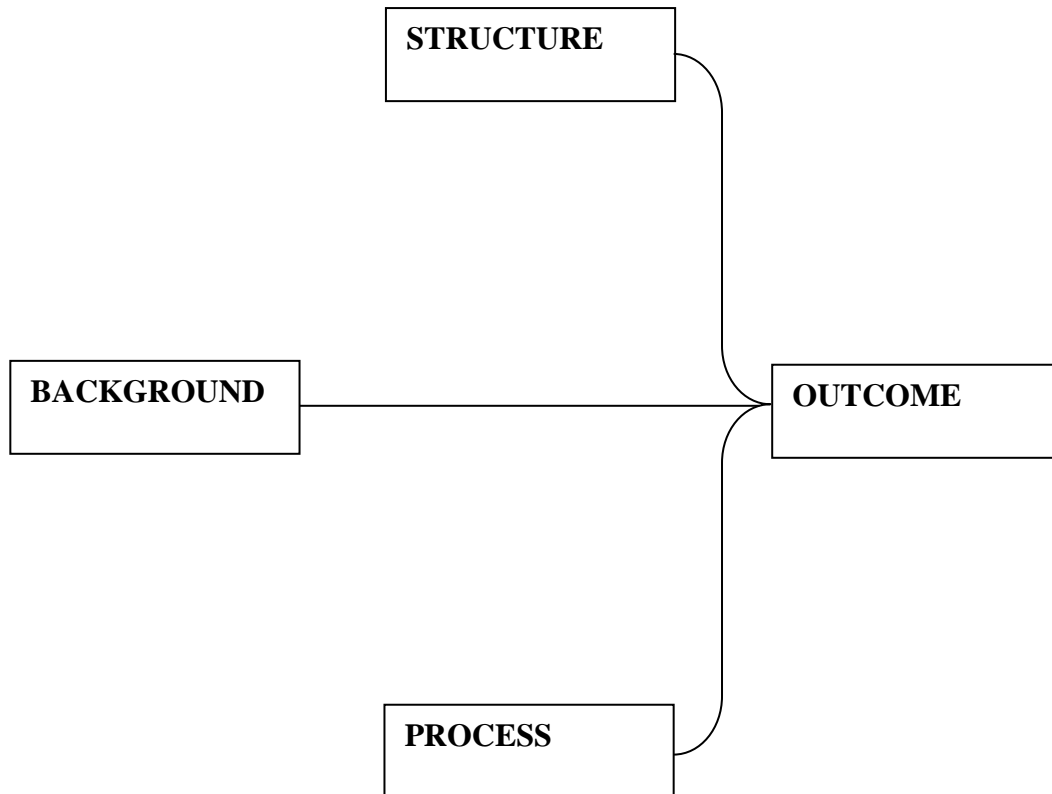


Figure 2.1: Conceptual model of patient centered care

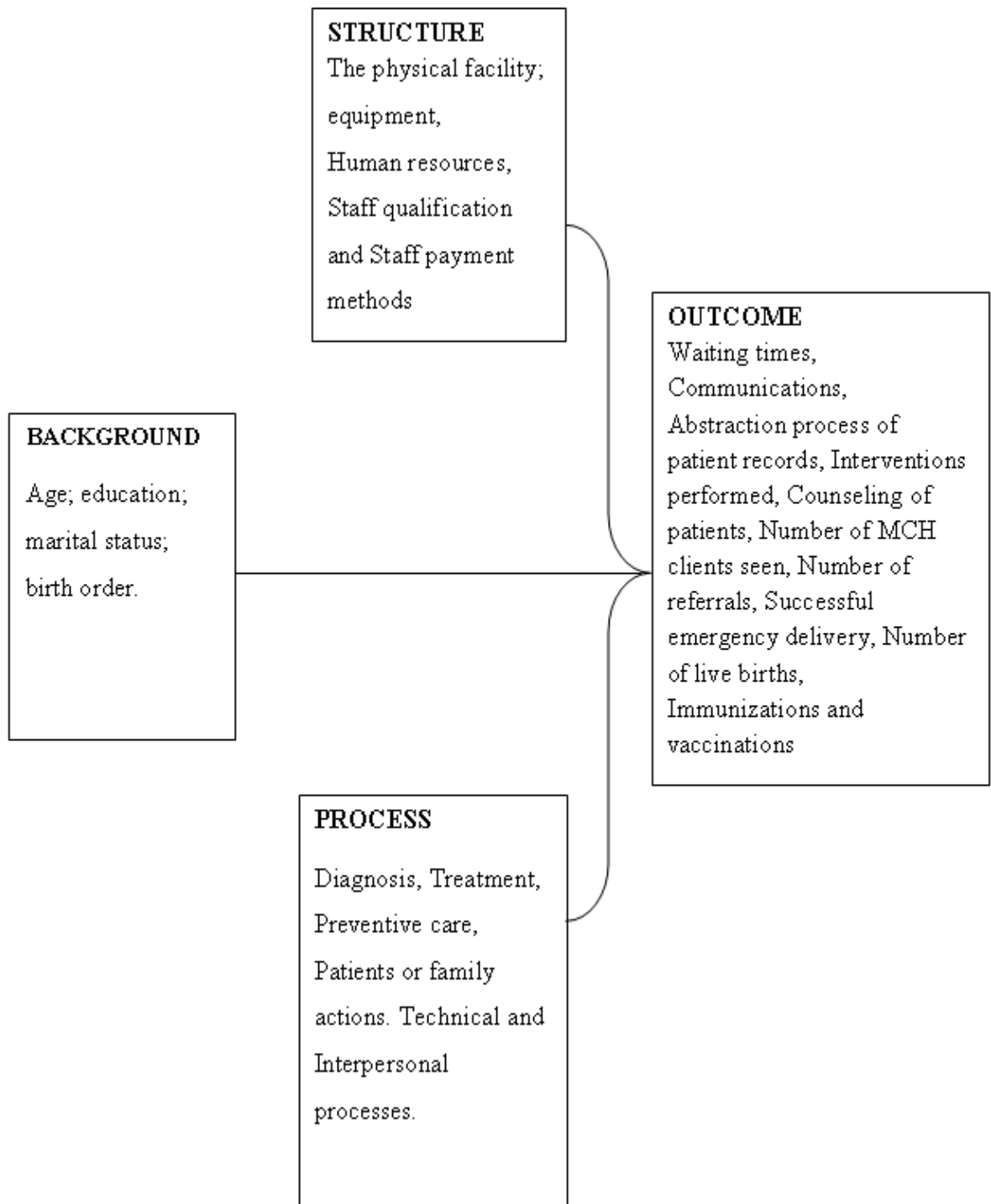


Figure 2.2: Operational Framework

CHAPTER THREE: METHODOLOGY

3.1 Introduction

This chapter is a description of the study site, study design and study population. It also includes a description of the sampling procedure, data collection methods and data analysis methods that will be used in the study.

3.2 Study Area

Kisumu County covers 0.36% of the total land mass in Kenya. It is located between longitudes 35° 28' and 35° 36' and latitudes 0° 12' and 1° 10' South. It is bordered by Counties of Vihiga and Nandi to the North, County of Kericho to the East, Homa Bay County to the South, and Siaya County to the West (Appendix I). Major health problems facing children in this County include diarrhoeal diseases, Acute Respiratory Infections (ARI) and malaria. Purposive sampling will be used to select the healthcare providers working in MNCH clinics for Focus Group Discussion, which will address areas of child health services namely, immunization, growth monitoring, treatment of endemic childhood diseases, health education, and outreach services. Cadres of health services providers to be considered will include; nurses, clinical officers, Doctors, Laboratory Technologists, Nutritionists and Pharmacists.

3.3 Study Population

The study participants will be mothers attending MNCH and healthcare service providers in the tier 3 public health facilities of Kisumu County. Nyanza province has a total of 962 health facilities 183 are found in Kisumu County. Kisumu County has the highest poverty rates compared to the other counties in Nyanza Region.

Table 3.1: Health Indicators Kisumu County

Health Indicator	Rate
Poverty	14.2%
HIV prevalence 2012 (KAIS)	18.7%
Hospital Delivery	45.6%
Qualified Medical Assistant during Birth	46.1%
Maternal mortality	597 per 100,000 live births

immunization coverage at 68.6%.	68.6%.
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Source: Kenya County Fact sheet 2014

3.4 Study Design

This will be a cross sectional descriptive study on the quality of maternal and child health services offered in the tier 3 Public Health Facilities in Kisumu county Kenya. Quality of healthcare will be assessed using a framework that was developed by Donabedian (1980, 1988) and later adopted by Ehiri and colleagues (2005).

Table 3.2: Framework for Quality Assessment

Components	Measures
<i>Structure</i>	
Type of facility	Accreditations
Materials and equipment	Staffing Ratios
Personnel	Staff qualifications
Training	Workloads
<i>Process</i>	
Clinical procedures	Professionally defined standard of care
Laboratory tests	Professionally defined treatment protocols
Referrals	Medical errors
Diagnosis, Treatment, patient education, staff attitude and staff communication.	
<i>Outcomes</i>	
Ultimate effects of process initiated by health workers	Patient satisfaction

3.5 Sampling

Kisumu County is the home to the largest town in the region hence the highest MNCH service workload due to high population, availability of major health facilities with modern equipment and more staff. It also has poor maternal indicators. (County Fact Sheet 2013). All the tier 3 public Health facilities will be included in this study.

3.5.1 Sample size determination

On average, 2588 mothers attend the MNCH services in Kisumu County tier 3 Health facilities (DHIS 2004).

Hence:

$$n = \frac{\frac{z^2 \times p(1-p)}{e^2}}{1 + \frac{z^2 \times p(1-p)}{e^2 N}}$$

n = sample size

z = z-score (2.58. Confidence level 98%)

e = margin of error (0.02)

p = population service uptake proportion (30%)

$$n = \frac{1.397844/0.0004}{1 + 1.0352} = 1717.084 = 1718$$

Sample size will be adjusted according to the formula below since Target population is less than 10,000

$$n = \frac{n}{1 + n/N}$$
$$= \frac{1718}{1 + 1718/2588} = 1032.576$$

$$n = 1033$$

This sample size will then be distributed proportionally to all tier 3 public Health Facilities according to the average monthly MNCH workload data from the District Health Information System (DHIS2 2014) shown in the Table.

Table 3.3 Average Monthly Workload and sample size distribution

Sub County	Health Facility Name	Monthly workload (x)	Sample size(x/N*n)
Seme	Kombewa Sub-County Hospital	204	81
Kisumu East	Kisumu County Referral Hospital	574	229
	JOOTRH	729	291
Kisumu West	Chulaimbo Sub-County Hospital	226	90
	Nyahera Sub-County Hospital	169	68
Muhoroni	Muhoroni Sub-County Hospital	148	59
Nyando	Ahero Sub-County Hospital	287	115
Upper Nyakach	Nyando Sub-County Hospital	251	100
	TOTAL WORKLOAD (N) 2588	2588	1033
TOTAL SAMPLE SIZE(n) 1033			

Source: Kenya District Health Information System (DHIS2) (2014)

3.5.2 Inclusion criteria

Pregnant Mothers attending 2+ ANC visits and Mothers in the peuperium who had a delivery in the selected health Facilities, residents of Kisumu County and must have stayed in Kisumu County for not less than 3 months.

Clinical staff i.e. Nurses, Clinical officers, Nutritionists, Pharmacists, Laboratory Technologists and doctors working in the MNCH Clinic.

All tier 3 Public Health Facilities offering Comprehensive MNCH services including Caesarian Section.

3.5.3 Exclusion criteria

All mothers who are attending MNCH clinics for the first time will be excluded from the study since their first visit would not allow them to give a satisfactory evaluation of the services offered at the health facility. Also mothers who are non-residents of Kisumu County will be excluded from the study.

3.6 Data Collection Process

3.6.1 Recruitment of research assistants

Three Research Assistants will be recruited for the study. These will be individuals with post-Secondary education experienced in conducting interviews using structured questionnaires and Key informant interview guides.

3.6.2 Training of research assistants and Pre-testing

Research assistants recruited for the study will be trained on the study objectives; questionnaire administration through mock administration as well as extraction of information from structured observation. The research tools will be piloted at Siaya County Referral Hospital.

3.7 Data Management and Analysis

Comparative data analysis will be done between the public and the private health facilities. Quantitative data arising from the study will be analyzed using the Statistical Package for the Social Sciences. Univariate statistics will be used to assess patterns of responses to the questionnaire items. Chi-square (χ^2) tests will be used to assess differences between categories and P-values of less than 0.02 will be considered significant. Indicators of quality will include qualifications of health workers, in-service training attended; availability of drugs and vaccines, availability of equipment/utensils for selected childhood services, regularity of services offered, clinical skills of health workers in the management of diarrhoea and Acute Respiratory Infection (ARI) as well as the quality of scheduled supervision of health workers. Qualitative data arising from focus group discussions will be analyzed using content analysis method (Krippendorff, 2004).

3.8 Ethical Considerations

Authority to conduct this study will be sought from Maseno University School of Graduate Studies (SGS) and ethical clearance will be obtained from Maseno University

Ethics Review Committee (MUERC). The County Director of Health will be informed and his authority sought to proceed with the study in the County. Prior to enrolment in the study, all potential participants will receive full explanation of the objectives of the study and the level of involvement for those who give informed consent to participate. Confidentiality will be maintained throughout the study.

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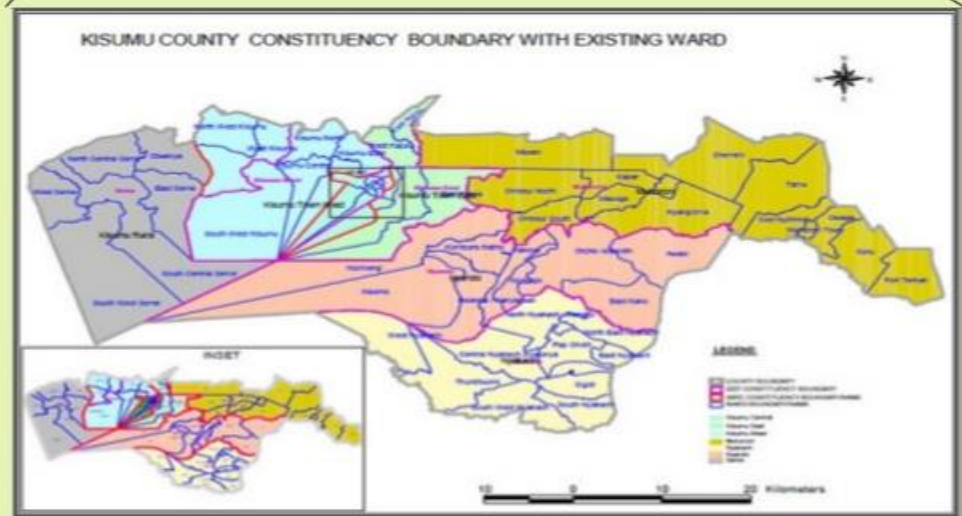
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Appendix 1; Kisumu County Map

KISUMU COUNTY MAP



Appendix II: Work plan

Activity	J	F	M	A	M	J	J	A	S	O	N	D
Proposal defense	DONE											
Submission of the proposal to SGS	DONE											
Submission of the proposal with the corrections from SGS	X											
Ethical Approval		X										
Training of Research Assistants		X										
Piloting		X										
Data Collection			X	X	X	X						
Data analysis							X					
Thesis writing								X				
Thesis submission for marking									X			
Thesis defense										X		
Amendment of the thesis and final submission										X		
Dissemination											X	

Appendix III: Budget

ITEM NO	ITEM	NO	Unit cost Ksh	# DAYS	TOTALS
1	Stationery				
	Document wallet	3	500		1500
	Ball pens	120	25		3000
	Photocopy paper ream	10	500		5000
	Writing paper ream	10	500		5000
	Lead pencil	48	30		1440
	Pencil sharpeners	6	35		210
	Rubber	12	20		240
	Rulers	12	30		360
	Cartridge	6	4500		27000
	SUB-TOTALS				43750
2	Allowances				
	Training of research assistants	3	1000	2	6000
	Data collection lunch	3	500	120	180000
	Research assistant transport	3	500	120	180000
	Data entry and analysis	3	500	30	45000
	Report writing	2	500	14	14000
	SUB-TOTAL				419000
3	Others				
	Air time	3	200	120	72000
	Dissemination of results	2	1500	7	21000
	SUB-TOTALS				93000
	SUB-TOTAL 1-3				555750
	10% contingency				55575
	GRAND TOTALS				611325

Appendix IV: LETTER OF CONSENT

FIND THE MANAGER, THE PERSON IN-CHARGE OF THE FACILITY, OR THE MOST SENIOR HEALTH WORKER RESPONSIBLE FOR CLIENTSERVICES WHO IS PRESENT AT THE FACILITY. READ THE FOLLOWING GREETING:

Good day! My name is _____. We are here on behalf of a student From Maseno University who is doing his PhD degree. We are conducting a survey of health facilities in Kisumu County to know the quality of Maternal Newborn and Child Health (MNCH) care services. Your facility was selected to participate in this study based on its level of service provision. We will be asking you questions about various MNCH services. Information collected about your facility during this study may be used by the [MOH], organizations supporting services in your facility, and researchers, for planning service improvement or for conducting further studies of MNCH services. Neither your name nor the names of any other health workers who participate in this study will be included in the dataset or in any report; however, there is a small chance that any of these respondents may be identified later. Still, we are asking for your help in order to collect this information. You may refuse to answer any question or choose to stop the interview at any time. However, we hope you will answer the questions, which will benefit the services you provide and the county.

If there are questions for which someone else is the most appropriate person to provide the information, we would appreciate if you introduce us to that person to help us collect that information. At this point, do you have any questions about the study? Do I have your consent to proceed?

INTERVIEWER'S SIGNATURE INDICATING CONSENT
OBTAINED:.....
DATE:.....

Appendix V: QUESTIONNAIRES

Population characteristics of clients (circle the answer)

a) Demographic and Antenatal characteristics

1. Maternal age (circle)

15-19 yrs =1, 20-29yrs =2, 30-39yrs =3, 40-45yrs =4

2. LMP (month/year)

3. Parity

Prim gravida=1, Para ii=2, Para iii=3, Para iv+=4

4. (i) Marital status (circle one response)

Single =1, Married =2, Divorced =3, Widowed =4

(ii) If married what is your partners' age (yrs):

15-19=1, 20-29=2, 30-39=3, 40-45=4, >45 =5

(iii) What is Partner's level of education?

None=1, Primary education=2, Secondary=3, College/tertiary=4

5. Residence

Urban =1, Rural =2

6. What is the distance of your residence to this health facility?

<30 minutes =1, 30 – 60 minutes =2, 1 – 2 hrs = 3, >2hrs =4

7. Maternal education

None=1, Primary=2, Secondary=3, College/tertiary=4

8. Religion

None=1, Catholic=2, Christian=3, Indigenous=4

9. Ethnicity

Luo=1, Non-Luo=2

10 For how long have you been coming to this facility

3Months =1, >3 months = 2

11. Is this facility friendly to mothers and children?

(i) Yes=1, No=2

(ii) If no why _____

12 Are there any cultures you know related to MNCH?

i) Yes=1, No=2

ii) If Yes which ones _____

13. Woman's source of income

None=1, Salaried=2, Small scale business=3,
Large scale business=4, Remittances=5, Dependent=6

14. HH financial status (stability of their source of income)

Stable =1, Not stable=2

15. Are you aware about the 4 ANC visit

Yes=1, No=2

(ii) If yes, what is the source of your knowledge on FANC?

This Hospital =1, Others = 2

16. No. of ANC visits attended

2 = 1, 3 = 2, 4+ = 3

17. Time of first ANC visit

First trimester=1, Second trimester=2, Third trimester=3

18. Components received during Antenatal period:

MODIFIED New WHO antenatal care model basic component checklist

Note: Mark the activities carried out as appropriate (Use the closest gestational age at the time of visit.)

FIRST VISIT for all women at first contact with clinics, regardless of Gestational age.

	Yes=1	No=2
Clinical examination		
Hb test		
Obstetric exam: gestational age estimation, uterine height		
Blood pressure taken		
Maternal weight/height		
Rapid syphilis test performed, detection of symptomatic sexually transmitted infections		
Blood type and Rh requested		
HIV test		
Malaria test		
Tetanus toxoid given		
Iron/folic acid supplementation provided		
Recommendation for emergencies / hotline for emergencies		
Complete antenatal card		
Urine test for protein		
Instructions for delivery/plan for birth		
Recommendations for lactation/contraception		
Return date		

19. Were you happy with the way the staff receive you in this hospital

Yes = 1, No = 2

If no why.....

20. Were you examined during labour

Yes = 1, No = 2

If yes briefly explain.....

.....

21. Did you undergo Caesarian section

Yes = 1, No = 2

If yes were you convinced of the reason why?

Yes = 1, No = 2

22. Was your child immunized before you left the hospital after delivery?

Yes = 1, No = 2

If yes what was the immunization.....

23. Were you advised to come back to the hospital after delivery?

Yes = 1, No = 2

If yes for what.....

24. Were you told of things to observe in the child and yourself that needs urgent attention in the Hospital

Child health education yes = 1, no = 2

Maternal health education yes = 1 no = 2

If yes for the child which ones.....

If yes for the maternal which ones.....

25. Were you thought how to breastfeed and bath the child

Yes = 1, No = 2

If yes was it helpful

Yes = 1, No = 2

26. Were advised on family planning

Yes = 1, No = 2

27. Were you tested for HIV?

Yes = 1, No = 2

If yes any treatment given.....

28. How would you rate the MNCH services offered in this facility? (Availability and quality of services)

Poor =1, Good =2, Not sure =3

29. Were you satisfied with the services you received?

Yes=1, No=2

Explain

.....
.....

30. Would you recommend this hospital to a friend in need of MNCH service?

Yes=1,

No=2

Explain.....

.....

31. Any additional comments/recommendations (both positive and negative)

.....
.....
.....
.....

QUESTIONNAIRE FOR THE HEALTH CARE WORKERS

Demographic characteristics

1. Age

24-34yrs =1, 35-45yrs=2, >45yrs=3

2 Gender

Male =1, Female = 2

3 Marital status

Yes=1, No=2

4 What is your cadre?

CO=1, MO=2, NO=3,
Nutritionist=4, Pharm Tech=5, Others=6 specify.....

5 What is your basic training institution?

KMTC=1, Kenya University=2, Abroad=3

6 Are you a qualified midwife

Yes=1, No=2

7 Deployment place in MNCH

ANC=1, FP=2, Maternity=3, CWC=4

8 For how long have you worked in this department

0-6 Months=1, 6-12months=2, >1 yr=3

12. How many hours do you work in a day?

8hrs=1, >8hrs=2

13. What is your average daily workload?

<5=1, 5-10=2, 10-15=3, >20=4

14. Any extra training you have attended in MNCH in last one year?

.....

15. Do you have adequate knowledge and skills to carry out your duties?

Yes = 1,

No = 2

If NO why.....

.....

.....

16. How frequent do make emergency referrals to other hospitals

Daily = 1,

Weekly = 2,

Monthly = 3

17. Have you had maternal death in the last one year?

(i) Yes = 1,

No = 2

(ii) If yes how
many?.....

.....

.....

.....

18. What do you think can be done to improve the quality of MNCH services in this
Hospital?

.....

.....

.....

.....

.....

.....

.....

Appendix VI: HEALTH FACILITY CHECKLIST

Materials & equipment	Available		Min	No Present		Materials & equipment	Available		Min	No Present
	Yes	No					Yes	No		
Lab						Fetoscope				
CWC						Speculum set				
Threatre						Baby stethoscope				
AN ward						Linen trolley				
Labor ward						General trolley				
PN ward						Phototherapy unit				
ANC						Autoclave				
FP room						Resuscitaire				
Toilets						BP machine				
Bad cots						Blood warmer				
Oxygen machine						Infant weighing scale				
Exam coaches						Adult weighing scale				
Delivery coach						Ultrasonic Nebulizer				
Fridge						MUAC tape				
Ultrasound						Wheel chair				
CT Scan						telephone				
MRI						Infant radiant warmer				
Portal lamps/overhead						Suction machine				
Nursery with incubators						stethoscope				
Emergency tray						Nursing station				
Personnel										
Obstetrician Gynecologists						Nursing Officer (midwife)				
Medical Officers						Nutritionists				
Clinical Officers						Medical Lab Tech				
Nursing Officers						Pharm Tech				

APPENDIX: VII

FOCUSED GROUP DISCUSSION GUIDE

1. Motivation to work.
2. Hospital status in terms of quality MNCH service provision.
3. MNCH Health education.
4. Future of MNCH in this facility.