ASSESSMENT OF QUALITY CARE OF COMMUNITY-BASED
MANAGEMENT OF ACUTE MALNUTRITION SERVICES IN ACCRA
METROPOLITAN AREA

BY
RHODALYN ADDA
(10550981)

THIS DISSERTATION IS SUBMITTED TO THE UNIVERSITY OF GHANA,
LEGON IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE
AWARD OF MASTER OF PUBLIC HEALTH DEGREE

JULY 2016
DECLARATION

I, Rhodalyn Adda, declare that apart from references that I have cited in the work, this dissertation is my own work. All references have been duly acknowledged.

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

Rhodalyn Adda      Dr. Augustine Adomah-Afari
(Student)      (Supervisor)

Date ................................. Date .................................
DEDICATION

This work is dedicated to God Almighty and to my wonderful family for their unending support.
ACKNOWLEDGEMENTS

My sincerest appreciation goes to Almighty God for his wondrous gift of love. I would like to acknowledge the important role of my supervisor who in spite of his busy schedule, took time off and painstakingly read through the report providing me feedbacks, criticisms and support. All these helped in the successful development of the work. I am very grateful to him for his instrumental contribution.

I wish to also acknowledge all staff and lecturers of the School of Public Health especially the Department of Health Policy, Planning and Management for their support throughout my period of studies.

In the same way, the management of the Greater Accra Regional Health Directorate, Accra Metropolitan Health Directorate and all staff of the various facilities who supported me deserve my unreserved appreciation.

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Finally I wish to extend my gratitude to all my colleagues for their support.
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<th>Description</th>
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<td>CHPS</td>
<td>Community-based Health Planning Services</td>
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<td>CMAM</td>
<td>Community-Based Management of Acute Malnutrition</td>
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<tr>
<td>CTC</td>
<td>Community-based Therapeutic Care</td>
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<tr>
<td>FANTA</td>
<td>Food and Nutrition Technical Assistance</td>
</tr>
<tr>
<td>FAO</td>
<td>Food and Agricultural Organization</td>
</tr>
<tr>
<td>FGD</td>
<td>Focus Group Discussion</td>
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<td>GDHS</td>
<td>Ghana Demographic Health Survey</td>
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<td>GHS</td>
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<tr>
<td>IOM</td>
<td>Institute of Medicine</td>
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<tr>
<td>IPC</td>
<td>Inpatient Care</td>
</tr>
<tr>
<td>MDG</td>
<td>Millennium Development Goals</td>
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<tr>
<td>MOH</td>
<td>Ministry of Health</td>
</tr>
<tr>
<td>MUAC</td>
<td>Mid Upper Arm Circumference</td>
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<tr>
<td>OPC</td>
<td>Outpatient Care</td>
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<td>RUTF</td>
<td>Ready-to-Use Therapeutic Food</td>
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<tr>
<td>SAM</td>
<td>Severe Acute Malnutrition</td>
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<tr>
<td>SD</td>
<td>Standard Deviation</td>
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<tr>
<td>UNICEF</td>
<td>United Nations Children’s Fund</td>
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<td>UNSCN</td>
<td>United Nations System Standing Committee on Nutrition</td>
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<tr>
<td>USAID</td>
<td>United States Agency for International Development</td>
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<tr>
<td>WB</td>
<td>World Bank</td>
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<td>WFH</td>
<td>Weight-for-Height</td>
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<tr>
<td>WFP</td>
<td>World Food Program</td>
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<td>WHO</td>
<td>World Health Organization</td>
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### DEFINITION OF KEY TERMS

<table>
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<th>Definition/description</th>
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<tr>
<td><strong>Acute Malnutrition</strong></td>
<td>It is a form of malnutrition characterized by the presence of bilateral pitting oedema or wasting.</td>
</tr>
<tr>
<td><strong>Bilateral Pitting Oedema</strong></td>
<td>A nutritional oedema as a result of abnormal infiltration and excess build-up of serous fluid in the tissues. It is an indication of SAM. Bilateral pitting oedema is classified in grades; grade 0 = “no bilateral pitting oedema”, grade + = “mild” (oedema on both feet), grade ++ = “moderate” (oedema on both feet and arms) and grade +++ = “severe” (generalised-feet, arms and face)</td>
</tr>
<tr>
<td><strong>Community-Based Management of Acute Malnutrition (CMAM)</strong></td>
<td>CMAM is a community intervention used in managing acute malnutrition.</td>
</tr>
<tr>
<td><strong>Malnutrition</strong></td>
<td>Malnutrition refers to an imbalance in the nutritional needs of the body.</td>
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<tr>
<td><strong>Medical Complications</strong></td>
<td>Medical complication refers to being SAM with conditions such as high fever, hypoglycaemia/hypothermia, unconsciousness, lethargy, intractable vomiting, convulsions, anorexia etc., and requiring inpatient care.</td>
</tr>
<tr>
<td><strong>Mid Upper Arm Circumference (MUAC)</strong></td>
<td>MUAC refers to measurement of the circumference of the left upper arm at the mid-point between the tip of the shoulder and the tip of the elbow. MUAC is used as an indicator to predict acute malnutrition in children 6-59 months. Severe acute malnutrition (&lt;11.5 cm) and Moderate acute malnutrition (11.5 to &lt; 12.5 cm).</td>
</tr>
<tr>
<td><strong>Outpatient Care (OPC)</strong></td>
<td>It is an outpatient care management of severe acute malnutrition for children 6-59 months without medical complications.</td>
</tr>
<tr>
<td><strong>Ready –to-use – therapeutic food (RUTF)</strong></td>
<td>It is a therapeutic food, high in energy, minerals and vitamins and commonly known as “plumpy nut” used for the treatment of SAM in children 6-59 months.</td>
</tr>
<tr>
<td><strong>Severe Acute Malnutrition (SAM)</strong></td>
<td>SAM refers to the presentation of bilateral pitting oedema or severe wasting (MUAC &lt; 11.5cm).</td>
</tr>
<tr>
<td><strong>Sphere Standards</strong></td>
<td>It is a minimum standards or indicators used to describe the success of CMAM. Sphere standards – Cure rate &gt;75%, Default rate &lt;15%, and Deaths rate &lt;5%.</td>
</tr>
<tr>
<td><strong>Wasting</strong></td>
<td>Wasting is a type of acute malnutrition.</td>
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ABSTRACT

Background: Quality of care in health care delivery has been linked to improved desired health outcomes. This means that the delivery of community based interventions like the community-based management of acute malnutrition put in place to address severe acute malnutrition, which contributes to morbidity and mortality in under-fives, should be of quality.

Objective: The aim of the study was to assess the quality of care of community-based management of acute malnutrition outpatient care service provision in the Accra Metropolitan area.

Methods: A cross-sectional study was conducted. The study employed mixed methods to assess the quality of community-based management of acute malnutrition services in the Accra Metropolitan area. Quantitative methods involved retrospective review of records of children who accessed community-based management of acute malnutrition services from 2013 to 2015. A checklist was used to assess availability of human resources, equipment, and supervision of staff, among others. Qualitative methods (focus group discussions) were also used to explore mothers / caretakers of severe acute malnutrition children’s perception of quality of care of the community-based management of acute malnutrition services. Quantitative data was analysed using STATA version 13 to estimate the proportion of children who recovered. Logistic regression was used to identify significance of relationships between the dependent and independent variables. The qualitative data was analysed using the thematic framework approach. The quality of care was determined by recovery rate and client satisfaction.
**Results / Findings:** Results from the quantitative analysis revealed a recovery rate of 62.0%, which was below the acceptable sphere standard (>75.0%), but above what is considered alarming (50.0%) as suggested by the World Health Organisation. The qualitative findings from this study however, revealed that clients perceived the quality of community-based management of acute malnutrition service as good as they were satisfied with the service delivery.

**Conclusion:** Overall, quality of community-based management of acute malnutrition services was considered sub-optimal based on the International Sphere standard for recovery rate.
CHAPTER ONE

INTRODUCTION

1.0. Background

The chapter presents background information to understand the idea of child undernutrition. It explores the existing evidence to realize the total impact of undernutrition in children in broad terms and particularly, severe acute malnutrition (SAM), as well as how it affects the continued existence and growth of children. The concept of community-based management of acute malnutrition (CMAM) used to treat SAM cases, which is the focus of this research is also described in this section.

The World Health Organization (WHO) describes nutrition as “the intake of food, considered in relation to the body’s dietary needs and good nutrition is a basis of good health. The inability to meet the body’s dietary needs leads to malnutrition” (WHO, 2010). In other literature, malnutrition has been attributed to the lack or excess intake of vital nutrients in the food (Black et al., 2008). Malnutrition denotes both ‘under nutrition’ and ‘over nutrition’ (Darnton-Hill et al., 2006; WHO, 2010). United Nations Children’s Fund (UNICEF) also describes under nutrition as the product of inadequate consumption of food and recurrent infections (UNICEF, 2006). It comprises having low weight for one's age, low height for one's age (stunted), thin for one's height (wasted) and lacking in vitamins and minerals (micronutrient malnutrition) and over nutrition as the build-up of excessive calories in the body (UNICEF, 2006). Malnutrition is often associated with under nutrition in developing countries, which affects children the most (Akparibo, 2014). For this study, the term malnutrition may be used to denote under
nutrition since malnutrition is commonly used to describe under nutrition in children. Many factors cause under nutrition, some of which are household food insecurity; not having access to diversity of safe foods all year round at the household level (FAO, 2012) as a result of natural disasters (e.g. flood or drought), conflicts, poverty, inadequate knowledge of feeding and care practices and infections (Picot, Hartwell, Harris, Mendes, & Clegg, 2012).

Malnutrition is a key contributor to the global disease burden and almost one-third of child deaths are caused by under nutrition (WHO, 2012). Malnutrition increases risk for diseases that lead to morbidity and mortality. Though it is hardly ever the straight cause of death (apart from serious circumstances, such as hunger), malnutrition is linked with 45% of deaths in children (Blössner et al., 2005). Malnutrition can either be acute or chronic or both (UNICEF, 2012). A UNICEF document explains that acute malnutrition is the rapid deterioration in nutritional status in a short time while chronic malnutrition occurs over time. Under nutrition can be classified as mild, moderate or severe (UNICEF, 2012).

This study focused on severe acute malnutrition (SAM) in infants and children. SAM manifests itself in three clinical forms namely, *kwashiorkor*, characterized by oedema, which may be mild (bipedal) moderate or severe (generalised), often associated with skin peeling and hair discoloration; marasmus, characterized by skinny look; and marasmic *kwashiorkor*, characterized by a blend of marasmus and *kwashiokor* features (Picot et al., 2012). Severe acute malnutrition refers to the presentation of bilateral pitting oedema or
wasting (low mid upper arm circumference (MUAC) < 115mm or low weight for height (WFH) < 3 standard deviations (SDs) from the median value (known as a z-score of ≤−3) (WHO, 2010).

Addressing severe acute malnutrition requires essential treatment (Collins et al., 2006). Until lately, children with SAM were referred to the hospital to be given therapeutic foods along with medical care in accordance with the WHO guidelines for treating malnutrition (Briend et al., 2006). With the introduction of ready-to-use-therapeutic foods (RUTF), severely malnourished children above the age of 6 months without medical complications are managed in the community (WHO, 2006).

1.1. Community based management of acute malnutrition (CMAM) in Ghana

The community based management of acute malnutrition (CMAM) was started in Ghana, by the Ghana Health Services (GHS) in partnership with UNICEF, WHO and USAID in June 2007 (Neequaye & Okwabi, 2012). Before the introduction of CMAM in Ghana, children with severe acute malnutrition (SAM) were treated in paediatric wards or the nutrition rehabilitation centers (NRCs) where nutrition counselling was provided and locally available foods prepared and served to these children (Neequaye & Okwabi, 2012). Neequaye and Okwabi (2012), report that the nutrition rehabs did not conform to the 1999 WHO treatment protocol for managing SAM or offer any specific therapeutic diets for children with SAM even though they were managed.
This necessitated the Ministry of Health/Ghana Health Services (MOH/GHS) in 2008 to adopt the CMAM approach for the management of SAM. The Ministry established two learning sites; Ashiedu-Keteke Sub-Metropolitan Area in the Greater Accra region and Agona in the Central region (Neequaye & Okwabi, 2012). The CMAM program consists of outpatient care (OPC) and inpatient care (IPC) services. The OPC services are provided near the community where children with SAM without medical complications are treated on a once-weekly basis. Additionally, there is an inpatient services for the few children suffering from SAM with medical complications who are admitted until stable, before being moved into the OPC to complete treatment (Ayokunle & Odusoga, 2014, Burza et al., 2015).

1.2. Problem Statement

Global statistics show that 51 million children under-five years were wasted and 17 million of them were severely wasted (UNICEF/WHO/WB, 2012). The prevalence of wasting in 2013 was projected at nearly 8% and almost a third of that was expected to be severely wasted. In 2012, about two thirds of wasted children lived in Asia and virtually a third in Africa, with related proportions for severely wasted children (UNICEF/WHO/WB, 2012). In Ghana, most children suffer from health related issues originating from malnutrition, which is a fundamental cause of one third of all child deaths (UNICEF, 2011). The Ghana Demographic Health Survey (GSS, 2014) indicates that 5% of children under-five years were wasted. Despite the prevalence of under nutrition being lower than the emergency thresholds, malnutrition still threaten Ghana’s overall social and economic development (Neequaye & Okwabi, 2012). Children who are affected by
under nutrition do not suffer just from immediate effects, but may have longstanding inter-generational repercussions. The consequences extend from ill health to limiting the economic development and progress of any country (Chane et al., 2014).

Quality of care in health care delivery has been likened to increased desired health outcomes (Institute of Medicine, 1990). Successfully managing malnutrition is thus, an overall health concern with prospective for far reaching results (Kerac, 2011). The result of properly managed SAM cases is thus, important, though access to quality care is quite limited with only about 5% of SAM cases having access to care and treatment (Horton, 2010).

The success of community-based programs to manage severely acute malnutrition (SAM) children is well-known following their application in emergencies (Collins et al., 2006; Akparibo, 2014). Some studies have looked at outcomes of treatment of SAM and factors that influence the effectiveness of CMAM in Ghana (Akparibo, 2014; Saaka et al., 2015). However, there is little/limited information available on the quality of care of CMAM service provided by health professional in non-emergency settings. Presently, there is no research done on the quality of care of CMAM services in the Accra Metropolitan Area.

Furthermore, the reality is that no study has explored clients’ (mothers of SAM children) perception of quality of CMAM services in the Accra Metropolitan Area. Thus, this study will provide evidence to fill this vacuum in the literature.
1.3. Justification of the study

The motivation for this study also emanated from the researcher’s own background and experience as a Nutritionist working in the health sector of the country. Therefore, the researcher was able to throw more light on the critical issues relating to the implementation of CMAM services in the study area in particular and the country as a whole.

Generally, this study sought to assess the quality of care of CMAM outpatient care services delivered by health professionals in the Accra Metropolitan Area. This was achieved by assessing the structure, process and outcome of CMAM care, determine the quality of case management of SAM as well as exploring the perception of mothers/caretakers of SAM children who are accessed the CMAM services. The results of this study will be of vital importance not only to the implementers, but for policy makers to adopt strategies to ensure quality service delivery of CMAM services in the rehabilitation of SAM cases. It will also contribute to increasing scientific knowledge of or evidence in relation to the community-based management of acute malnutrition.

1.4. General Objective

The aim of the study was to assess the quality of CMAM services provided to severe acute malnourished children without medical complications in the Accra Metropolitan Area.
1.4.1. Specific Objectives

The specific objectives of the study were as follows:

1. To determine the quality of case management by health providers through record review of treatment cards using the Ghana Health Service Quality Checklist for CMAM.

2. To assess the structural, process and outcome indicators of CMAM care.

3. To explore clients’ (mothers of SAM children) perceptions of quality of CMAM services provided by the health professionals in the Accra Metropolitan Area.

1.4.2. Research Questions

The following questions will help find answers to address the research objectives:

1. What is the quality of case management of SAM children by health providers in CMAM care?

2. How do structural and process indicators affect the outcome of CMAM care?

3. What are the clients’ perceptions of quality of CMAM services provided by the health professionals in the Accra Metropolitan Area?

1.5. Outline of the dissertation

This study has six main chapters. Chapter one (1), the introductory chapter presents the background to the study, statement of the problem, the significance of the study, the objectives of the research, research questions and the outline of the thesis.
Chapter two (2) presents explored relevant literature on global view of malnutrition and its consequences, interventions available with regards to community-based management of acute malnutrition program, the theoretical and conceptual frameworks of quality community-based management of acute malnutrition care.

Chapter three (3) describes the methodology adopted in this study to assess the quality of community-based management of acute management. Chapter four (4) presents analysis and presentation of the findings from the study.

Chapter five (5) presents’ discussions of the findings related to literature and the theoretical framework. Chapter six (6) summarises the findings, provides recommendations for policy and practice and then presents limitations to the study.
CHAPTER TWO

LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

2.0. Introduction

The chapter presents the overview of malnutrition and interventions to address malnutrition. It also presents literature on quality health care as well as the theoretical and conceptual frameworks used in the study in explaining all relevant issues regarding the study.

2.1. Malnutrition

Malnutrition is considered as one of the attributable factors of illness and deaths among children throughout the world (UNSCN, 2010; WHO 2012). Malnutrition is a key obstacle for attainment of the Millennium Development Goals (WHO, 2007; UNICEF, 2010). Generally, considerable headway towards achieving Millennium Development Goal 4 (MDG4) [now Sustainable Development Goal 3], which was reducing child mortality, has been achieved. From 1990, there has been a reduction in global under-five mortality rate to about 50% (WHO, 2012). Nonetheless, this decline in rate in the under-five mortality is quiet inadequate to reach the MDG target of a two-thirds drop in mortality levels by the year 2015 (WHO, 2012). This is because of the estimated 6.3 million children under the age of five who died in 2013; over half of the deaths could have been averted through low cost interventions. Underlying under nutrition accounted for almost 45% of these deaths (WHO, 2012). According to WHO (2012),”children in Sub-Saharan Africa are more than 15 times more likely to die before the age of five than children in developed regions”. Children who are affected by under nutrition do not
suffer just from immediate effects, but may have longstanding inter-generational consequences.

2.2. Causes of Malnutrition

Malnutrition occurs as a result of several factors, with most relating to poor diet and recurrent infections (Smith & Haddad, 2000; Picot et al., 2012). Smith and Haddad (2000) found that malnutrition resulted from circumstances such as political instability and poor economic development, to some factors such as infections and inadequate food intake. Inadequate diet and disease happens as a result of poverty, environmental conditions (famine, drought) and food insecurity. Based on this, Blössner et al. (2005) concluded that malnutrition was a health consequence and a risk factor for diseases and which could increase the risk for both morbidity and mortality.

The UNICEF conceptual framework on the causes of malnutrition describes malnutrition at three levels (UNICEF, 1990). The framework links malnutrition to immediate causes, which is at individual level, underlying at the household or family level and basic at the community and national level. These are explained as follows; (UNICEF, 1990).

**Immediate causes**

At the individual level, causes are linked to inadequate dietary intake and disease. Children who are malnourished as a result of inadequate dietary intake are at risk for infections and infections will lead to poor absorption and utilization of food in the body,
and the cycle continuous. These factors are dependent on one another (Smith & Haddad, 2000).

**Underlying causes**

The underlying causes are as a result of household food insecurity, inadequate care and health services. These are considered to be the food, care and health factors (UNICEF, 2012). Household food insecurity will lead to inadequate access to food thereby resulting in inadequate intake of food (FAO, 2012). Inadequate care, unhealthy household environment and inadequate access to health care and services worsen the plight of malnourished children (WFP, 2005). Good caring and feeding practices provide good nutrition (UNICEF, 2012). Having access to basic health service delivery ensures prevention and management of diseases. These three factors also connect to each other in underlying causes (UNICEF, 2012). Fundamental to these factors are poverty, inequality in incomes and unemployment, which affect malnutrition (Vorster & Kruger, 2007).

**Basic causes**

The basic causes contributing to undernutrition include unavailability of resources (human, structural, financial as well as political and cultural factors).

The three levels of the causes of malnutrition as shown in the UNICEF conceptual framework below.
2.3. Severe Acute Malnutrition (SAM)

Recent classifications of malnutrition have been provided by humanitarian groups to ensure better attention of children needing treatment for malnutrition in crisis situations (WHO, 2009). These include indicators such as the mid-upper arm circumference (MUAC) and presence of bilateral pitting oedema. Severe acute malnutrition is defined by WHO and UNICEF as low weight for height (less than -3 z-scores of the median WHO growth standards or having MUAC less than 115mm or showing signs of noticeable severe wasting or the presence of bilateral pitting (nutritional) oedema (WHO, 2009). This is the recommended definition for recruiting children into CMAM program. Children who are SAM are extremely vulnerable and have a higher risk for mortality (FANTA,
2012). The clinical signs of SAM include Marasmus (severe wasting), Kwashiorkor (bilateral pitting oedema) and Marasmic kwashiorkor (a combination of bilateral pitting oedema and severe wasting).

In Ghana, only mid upper arm circumference (MUAC) is used in assessing wasting though MUAC and WFH are used to assess wasting. MUAC is measured by determining the circumference of a child’s left mid-upper arm. MUAC < 11.5 cm for children aged 6-59 months indicates SAM (FANTA, 2012). MUAC is said to be an appropriate indicator of risk for mortality in relation to acute malnutrition than WFH z-score (WHO, 2009). Bilateral pitting oedema is manifested as an unusual build-up of serous fluid in connective tissue. Bilateral pitting oedema (also called kwashiorkor) can be assessed by applying thumb pressure on top of both feet for three seconds and if a dent occurs in the foot after the thumb is raised then it is an indication of SAM (FANTA, 2012).

2.4. Global Interventions to address SAM

The WHO recommends the implementation of a community-based model in treating children with severe acute malnutrition due to limitations of the biomedical approach to address severe malnutrition (Akparibo, 2014). The CMAM program originated based on three important evidences (Collins et al., 2006; Akparibo, 2014). First, when severely malnourished children access early nutritional care during the development of their condition and continue in the CMAM program until they have recovered, then there will be high success rates of recovery. On the contrary, if severe acute malnourished children
enrol into care late and/or they are not encouraged to stay in the program for as long as needed, then success rates of treatment are likely to be low (Collins et al., 2006).

This is because malnutrition results from various interrelations with political, social, economic, environmental and public health factors. The progression of malnutrition clinically involves a steady decline in nutritional status towards an imbalance in metabolic processes, suppression of the immune system, recurrent infections and finally death (Collins et al., 2006).

The second is that to ensure compliance people must appreciate, accept and partake in the programs. This allows for the community-based programs to be sustained and effective. Promotion of participation from community members require that barriers to access are removed and can be done through community sensitization. These barriers range from physical to socio-cultural barriers to access (Collins et al., 2006).

The third is towards the sustainability of the program. When key stakeholders are involved through social mobilization and success accrued from the program, it provides them positive feedback that after all, conditions were not so devastating but that it has been easily resolved with food provided by the families themselves (Collins et al., 2006). Due to this multifaceted nature of malnutrition, interventions are targeted to prevent and treat SAM. The interventions designed to prevent SAM involves improving access to good food and health care; improving knowledge and practices in nutrition and health; encouraging the promotion of exclusive breastfeeding for the first six months of a child’s
life; promoting complementary feeding practices for all children aged 6-24 months with emphasis on age-appropriate complementary foods that are locally available while improving water, sanitation and hygiene practices to protect children against infections. Treatment according to WHO guidelines, however, is required of those who are severely malnourished (WHO/WFP/UNSCN/UNICEF, 2007).

2.4.1. Community-Based Management of Acute Malnutrition (CMAM)

The community-based management of malnutrition is a model aimed at providing effective treatment to severely malnourished children without medical complications who form the majority to be managed at the outpatient care site through the use of mobilization of communities to involve families of affected children (Collins et al., 2006; WHO, 2007). However, the CMAM model is based on the principle of ensuring maximum coverage and access to families of affected children to enhance compliance regardless of their geographical location, timeliness in identifying cases early, providing appropriate treatment to the severely malnourished using ready-to-use therapeutic foods (RUTF), provision of routine medication and giving care as long as needed (Collins et al., 2006; WHO, 2007).

Collins and colleagues (2006), stated that majority of severely malnourished children without medical complications could be easily managed at the community level with simple energy dense foods. This could help reduce the risk of cross infections, which contribute to mortality from severe acute malnutrition due to over crowdedness in hospital wards where these cases were managed. Those who are diagnosed as severely
acute malnourished with medical complications are reserved for inpatient care (Collins et al., 2006). The complications include bilateral pitting oedema of grade +++ or generalized pitting oedema, high fever, hypothermia, hyperglycaemia, anorexia, lower respiratory tract infection, severe dehydration and severe anaemia palmar pallor which are treated in an inpatient care sites according to the WHO protocol till stabilized before moved to community-based programs (WHO, 2009). For children who present with SAM without medical complications, they are treated through weekly attendance in outpatient care sites where they are provided weekly take home ration of the ready-to-use therapeutic foods and a course of regular medications such as anthelminthic, oral broad-spectrum antibiotics, vitamin A and if tested positive for malaria, antimalarial are administered (Collins et al., 2006, WHO, 2009).

This approach also targets to incorporate treatment with different interventions intended to decrease the occurrence of malnutrition and improve food security (Collins et al., 2006). It takes into account the socio-economic influences such as poverty, great amount of work for women, and barriers to accessing health care services that contribute to the late presentation of acute malnutrition. The programs are thus decentralised to reduce geographical access and ensure community participation and mobilisation (Collins et al., 2006).

Some studies have shown that benefits of the community-based approach are many (Briend et al., 2006; Collins et al., 2006). A study in Malawi, found that the cost of CMAM was about $42 per disability-adjusted life year (DALY) as against $493 for in-
patient care (Wilford, Golden, & Walker, 2012). However, the cost (US $805.36) in Ghana, was high as compared to those reported in earlier studies (Abdul-Latif & Nonvignon, 2014). This was attributed to low case detection even when coverage was high unlike the other countries. A related observation was made in Bangladesh (Puett, Coates, Alderman, & Sadler, 2013).

In another study, the CMAM program greatly improved mortality linked with malnutrition from 29% to 18% as a result of the decentralization of care together with better geographical coverage (Sadler, Kerac, Collins, Khengere, & Nesbitt, 2008). Based on this, Ayokunle and Odusoga (2014), concluded that CMAM had proven to be the best way of managing malnutrition.

2.4.2. Community-Based Management of Acute Malnutrition in Ghana

Knowing the huge problem of child malnutrition on socio-economic growth as well as weakening national health system, the Ghana Health Service in partnership with development agencies (USAID, CRS, UNICEF, and WHO) came together to address SAM in children (Akparibo, 2014).

Neequaye and Okwabi (2012) stated that the non-conformity to the WHO 1999 treatment protocol for the management of SAM by nutrition rehabilitation centers resulted in a slow progress rate of management of acute malnutrition (wasting). Based on this, it became necessary to accept an alternative method to treat children with SAM in Ghana (Akparibo, 2014).
At the start of the program, it was run as community-based therapeutic care (CTC) before 2011 (Ayokunle & Odusoga, 2014). The components of CMAM in Ghana, include community outreach involving mobilization, case finding, referral and follow-up, outpatient care (OPC) of children with SAM without medical complications, inpatient care (IPC) of children with SAM with medical complications and other programs for the management of moderate malnutrition, for example, Supplementary Feeding, Infant and Young Child Feeding Counselling, among others (GHS, 2010).

Children aged 6-59 months who are severely malnourished without medical complications are admitted into outpatient care (OPC). That is, having the absence of complications such as hypoglycaemia, convulsion, skin infections among others, child being clinically well and alert, oedema limited to grade + or ++ and passing the appetite test else the child is managed on in-patient basis. The CMAM service is provided at health centers and community- based health planning service (CHPS) compounds to treat severely malnourished children in their catchment area (Yebyo, Kendall, Nigusse, & Lemma, 2013). The children are provided weekly take home ration of lipid-based ready to use therapeutic foods (RUTF or plumpy nuts), which contain mineral and vitamin mix (CMV) (GHS, 2010).

The CMAM services are provided within existing MOH/GHS service facilities. The outpatient care are provided in hospitals, polyclinics, health centres, community clinics, community-based health planning services (CHPS) and community outreach points,
while inpatient care services are provided only in hospitals (Neequaye & Okwabi, 2012). The CMAM approach has reduced the length of stay of severely malnourished children in the hospitals (Park et al., 2012).

2.5. Conceptual framework

The conceptual framework of quality of care of CMAM services in managing SAM is guided by an adapted quality of care framework proposed by Donabedian (1988, 2005). This framework conceptualizes three quality-of-care dimensions namely, the structure (attributed to settings where care is delivered), the process (showing whether or not good medical practices are followed), and the outcome (reflecting the effect of the care on health status). The structure in which care is provided affects processes and outcomes. The structure and process also affect the outcome (Donabedian, 1988; 2005).

In the context of this study, the structure consists of elements such as availability of trained staff, availability of routine drugs, equipment and supplies, availability of protocols/guidelines and supervision. The process includes provider-client interaction, adherence to standard guidelines and protocols, information provision and follow-up mechanism. The outcomes selected were client satisfaction and recovery rate.

Client satisfaction is a key element of the quality of health care often responsible for client’s compliance with treatment, thus influencing the value of care (Gilson, Alilio, & Heggenhougen, 1994; Guerrero, Myatt, & Collins, 2010). The quality of care in health
care delivery has also demonstrated a link with improved health outcomes (Institute of Medicine, 1990).

The framework in figure 2.2 below shows the relationship between quality of CMAM services received, the processes and outcomes.

Figure 2.2: Conceptual Framework of the quality of CMAM services (Modified from Donabedian, 1988).

2.6. Quality of CMAM Services

The quality of health service has been a focus of many policymakers over the decades as it is clear that much has been achieved in terms of scientific knowledge, resource provision and increasing access to service delivery (Bengoa et al., 2006). In spite of this,
The quality of health care is not guaranteed as many countries are challenged as to which quality approaches to be used to have maximum impact on health outcomes (Bengoa et al., 2006). There is also now growing evidence showing that offering CMAM services at the doorstep of communities is not equivalent to improving access (Guerrero & Gallagher, 2012). Despite the fact that the efficacy of the CMAM model and protocol is presently established, its success is still reliant on the quality of program implementation (Guerrero & Gallagher, 2012).

The concept of quality health care is multidimensional as there are several definitions by different authors but a well-known definition by the American Institute of Medicine (IOM, 2001), which draws on many features of the other definitions of quality care is: "The degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge". Donabedian (2005) has recommended three approaches to assessing quality of care. These are scrutiny of structure, process, and outcome. Thus, the Donabedian model of quality of care, as explained below, will be used to explain the findings of this study.

2.6.1. Structure

The structure relates to the resources of the provider, the infrastructure and organizational settings in which care is provided (Donabedian, 1992, 2005). These include physical structure, availability of equipment, availability of drugs and supplies, availability of guidelines and protocols, trained human resources and supervision.
Structure affects process and process also affects outcome (Donabedian, 1992, 2005). Though some studies have shown that the structural indicators are essential but not adequate to ensure quality care (van Nie et al., 2014; Bonaccorsi et al., 2015). Other studies in South Africa, Malawi and elsewhere have also shown that structural indicators can compromise quality care (Gathara et al., 2011; Hoque et al., 2012; Ebben et al., 2013; Puett et al., 2013).

2.6.2. Process
The quality of the process of care is explained in terms of the standards of scientific medicine, ethics and values of people (Donabedian, 2005). This simply means that the process shows whether what is recognized as good health practice has been applied or not (Mariko, 2003). It includes adherence to protocols and guidelines, provision of information, follow up mechanisms, provider client interactions, among others (Donabedian, 2005). Studies have shown that processes can significantly influence outcomes (Briend et al., 2006; Collins et al., 2006; Ebben et al., 2013).

2.6.3. Outcome
Outcome refers to a modification in a patient's present and future health status that can be linked to the precursor of healthcare (Cleary & McNeil, 1988). It includes client’s satisfaction and recovery rate. Outcomes have been considered the most effective indicator of quality of care though some consider the structure or process (Cleary & McNeil, 1988; Mariko, 2003; Puett et al., 2013). People have a number of reasons why they stress more on outcome measures. In relation to Donabedian’s framework of quality
of care, the outcome is determined by the process and the structural aspects of care (Bonaccorsi et al., 2015).

The CMAM program is based upon the fundamental standard that all people who suffer the risk of malnutrition should receive proper care and support (Collins et al., 2006). Collins et al. (2006), argue that the care provided should be unbiased, targeted only on the basis of need. Service provision should be delivered without discrimination among populations who are affected. This model then ensures commitment to the provision of appropriate care to the acutely malnourished population in a timely manner for as long as needed.

The program beneficiaries’ satisfaction with a program is the main component of quality of care, prompting participation and compliance (Guerrero, Myatt, & Collins, 2010). Bannerman and colleagues (2005), agree that it is important to consider factors relating to quality of care since they significantly influence patients’ experience of care and use of services. This makes it important to recognise that quality of care should both be from the perspectives of care providers and beneficiaries.

2.7. Dimensions of Quality of Care

Bengoa and colleagues (2006), argue that quality of health care delivery is founded on improvements in six aspects also known as dimensions of quality. These dimensions of quality call for health care to be:
**Accessible:** providing timely health care through the use of skills and resources that are appropriate to health need as well as ensuring geographical access.

**Acceptable/Patient-centred:** this entails providing health care, which involves the consideration of inclinations and needs of clients and their cultural background.

**Equitable:** provision of quality health care regardless of socioeconomic status, race, gender, ethnicity and geographical location.

**Effective:** providing health care that is evidence-based and contribute to improved health outcomes for individuals and communities, based on need.

**Efficient:** providing health care, this makes best use of resources and avoids waste in achieving desired health outcomes.

**Safe:** providing health care which reduces risks and harm to clients and staff.

### 2.8. Perspective of Quality

Stakeholders in the health systems share different perspective of quality of care. These stakeholders include, clients assessing care, health care providers, community, NGOs and others. Stakeholders have different expectation to what quality health care is and all these expectations need to be met to satisfy their perspective of quality care (Bannerman *et al.*, 2005). The perspective model of quality of care was applied to explain the findings this study.
2.9. Structure

The key structural elements are explained below.

2.9.1. Availability of trained staff

The availability of an adequate number of trained health care providers is critical to providing effective CMAM services. Effectively managing SAM cases require health care providers to be trained and equipped with knowledge of CMAM so as to provide appropriate care leading to desired outcomes (Deconinck, Swindle, Grant, & Navarro-Colorado, 2008).

2.9.2. Availability of drugs, equipment and supplies

The provision of quality CMAM care not only depends on trained health providers, availability and adherence to protocols and guidelines, but also on the availability of routine drugs and supplies. Studies have shown that unavailability of routine drugs and supplies interfere with quality health care delivery (Mkoka, Goicolea, Kiwara, Mwangu, & Hurtig, 2014). Moreover, inadequate supply of routine drugs and supplies leads to poor morale of health care providers as they are unable to provide complete care (Mkoka et al., 2014).

2.9.3. Availability of Protocols and guidelines

The availability of protocols and guidelines aids health providers to put evidence into practice. It empowers health providers as to what should be done to decrease inconsistency in the treatment of patients as well as improve the quality of care (Ebben et
al., 2013). Protocols and guidelines have been shown not only to have improved skills of health providers but also enabled in the speedy delivery of healthcare service whilst promoting the health of the patient (Darzi, 2008).

2.9.4. Supervision

Supervision is crucial in identifying weaknesses and strengths of service providers in service delivery. Besides, it plays a role in building capacity of staff while promoting positive attitudes among service providers (Deconinck et al., 2008). A study revealed that poor treatment of SAM cases was attributed not only to inadequate training of staff, but also irregular supportive supervision (Chane et al., 2014). This means that supervision is key in ensuring quality care.

2.10. Process

This part explains the process of care in CMAM.

2.10.1. Provider – Client Interaction

Provider-client interaction is considered one of the key concerns of quality care. The relationship between health worker and client has been seen as key in ensuring quality of care (Bannerman et al., 2005). Positive client–provider interaction to a large extent has been attributed to use of services as well as compliance to treatment (Hulton, Matthews & Stones, 2007).
2.10.2. Adherence to national CMAM guidelines with standardized treatment protocols

The development of guidelines and protocols are to ensure improvement in quality of care, to minimise variation in service provision as well as to ensure that appropriate care practices are followed (Ebben et al., 2013). This is no exception to CMAM protocols and guidelines. When these protocols and guidelines are disseminated together with training, it helps promote adherence to SAM treatment thereby leading to desired outcomes (Collins et al., 2006; Puett et al., 2013; Bonaccorsi et al., 2015). A study on adherence to guidelines and protocols in hospital settings revealed that health professionals who did not adhere to guidelines and protocols were not able to provide appropriate care to patients (Ebben et al., 2013). Additionally, research has also shown that non-adherence to protocols had led to misclassification of SAM cases, wrong admissions and exit criteria thereby affecting quality of care (Deconinck et al., 2008).

2.10.3. Nutrition Information Provision

Provision of appropriate information to patients and especially to mothers of SAM children is fundamental to quality health care. This allows mothers (patients) to understand what is wrong with their children and what needs to be done to improve the status of the children among other things. It also allows patients make informed decisions about their health (Husson, Mols, & Van de Poll-Franse, 2011).
2.10.4. Follow up mechanism

Follow-up mechanisms plays a central role in ensuring quality care as it has been seen to influence both the care processes and the outcome of care (Al-Azri, 2008). Al-Azri (2008), found that follow up ensured patients compliance with treatment and improved outcomes.

2.11. Outcome

This part also explains the outcomes of quality CMAM care as adapted in the model.

2.11.1. Client satisfaction

Assessing client satisfaction is important since it can affect their health status and outcome (Guerrero et al., 2010). In recent times, clients have been made to assess quality of care based on their satisfaction with services that they have received as it influences quality of care (Aldana, Piechulek, & Al-sabir, 2001). Several studies have reported that satisfied clients usually comply with treatment and follow ups and ensure continuum of health care (Cleary & McNeil, 1988; Gamble, Creedy, & Teakle, 2007; Ruel & Alderman, 2013; Tayelgn, Zegeye, & Kebede, 2011).

2.11.2. Recovery Rate

Improving the health outcome of a patient has become a main concern for all health care providers. Recovery rate is one of the outcomes used in the evaluating the effectiveness of CMAM care (Briend et al., 2006; Collins et al., 2006). The rate is compared to the internationally accepted sphere standard of >75.0%. During treatment it is expected that
majority of children who access care recover as quickly as possible. This becomes a means for assessing the effectiveness of the program (Akparibo, 2014).

2.12. Identified Gaps

The literature review revealed that all the studies done reported the target participants as children aged 6 to 59 months old diagnosed with SAM. Even though most studies used the recommended definition of SAM as low weight for height less than -3 z-scores of the median WHO growth standards or having MUAC less than 115mm or showing signs of visible severe wasting or the presence of nutritional oedema (WHO, 2009) for recruiting children with SAM, a few varied. Almost all studies were done in Sub Saharan Africa of which Ghana is part. The review also showed that the outcomes such as recovery, default among others were compared to the International Sphere minimum standards. Most of the studies also employed the mixed method approach which tends to combine views expressed by beneficiaries about the intervention and individual assessments. Thus, it helped the researcher to use that approach to assess the capacity of facilities to provide quality CMAM services as well as understand the perspectives of clients and providers with regards to the quality of service delivery. This justifies the use of mixed methods to generate proper evidence to understanding what goes into providing quality services based on structures, processes and outcomes. Although similar studies have been done elsewhere in Africa, this has not been done in Ghana and precisely in Accra. This means that a gap in literature will be filled regarding the quality of CMAM services in Accra Metropolitan Area.
2.13. Chapter Summary

The chapter reviewed relevant literature in relation to the theoretical and conceptual frameworks. The next chapter discusses the methodology adopted in the study.
CHAPTER THREE
METHODOLOGY

3.0. Introduction

This chapter describes the methodology used in this study to assess the quality of community-based management of acute malnutrition (CMAM) services in selected facilities in the Accra Metropolitan Area. The chapter is made up of various sections. Section one (1) is made up of the study design. The profile is presented in section two (2). Section three (3) presents the variables under study. Section four (4) is on the study population. Section five focuses on sampling and sampling strategy. Data collection methods/techniques / tools are explained in section six (6). The section seven (7) looks at pre-test of questionnaires. Section eight (8) is on data quality assurance. Data analysis, ethical consideration and the chapter summary are described in sections nine (9), ten (10) and eleven (11) respectively.

3.1. Study Design

This study applied a cross-sectional design using mixed methods (i.e. quantitative and qualitative). Mixed methods where both quantitative and qualitative methods are adopted, are gradually being seen as effective, because they focus on the strengths of each method (Curry, Nembhard, & Bradley, 2009). A mixture of quantitative and qualitative concepts help to achieve various intentions, including substantiating results, having more complete data, and using results from one method to complement the other (Morgan, 2006; Creswell & Clark, 2007; Curry et al., 2009).
Traditionally, researchers either used qualitative or quantitative research methods to assess the quality of programs (Pope et al., 2006; Pope & Mays, 2013). However, due to the misunderstanding between which is the best has raised lots of questions regarding the weaknesses of single methods in the assessment of interventions such as the CMAM program. Researchers who use quantitative methods often have a positivist outlook of research evidence, while researchers who use qualitative methods are interpretivist (Creswell, 2009; Akparibo, 2014). From the philosophical point of view, positivists believe in using scientific methods to explain phenomenon with statistics (Silverman, 2006; Curry et al., 2009; Creswell & Clark, 2011). They are of the view that qualitative research methods pay no attention to representativeness in sampling and their results are often one-sided (Fielding, 2010).

In contrast, the interpretivist use qualitative research methods to investigate issues from the views of study participants through inductive reasoning rather than a deductive reasoning to the truths about social processes (Curry et al., 2009; Ebrahim & Bowling, 2009). They believe that qualitative approach in data collection help to understand happenings in the social world (Curry et al., 2009). It is on this premise that the study used both quantitative and qualitative methods to assess the quality of the CMAM program to provide a real picture of what actually goes on during CMAM service provision. The quantitative method was used to address objectives one. Both quantitative and qualitative methods were used to address objective two and qualitative method for objective three.
3.2. Study Area/Location

The study was conducted in the Accra Metropolitan Area in the Greater Accra Region. Accra Metropolitan Area is one of the sixteen districts in the Greater Accra Region. The Accra Metropolitan Area is a national as well as the regional capital. It occupies a land area of approximately one hundred and forty-four kilometres square (144km$^2$) (Accra Metropolitan Health Directorate, 2014). The metropolitan area is bordered to the North by Ga East and part of Ga West District, to the south by the Gulf of Guinea, and stretches from Kpeshie Lagoon near Chorkor, to the East, is Ledzokuku Krowor Municipal as well as Adentan Municipal and to the West by Ga West and Ga South Municipality (Accra Metropolitan Health Directorate, 2014).

The Accra Metropolitan Health Directorate has four (4) active outpatient care sites which offer CMAM services for the rehabilitation of malnourished children in its environs. The services provided include screening, counselling and management of acute malnutrition among children under five. The total number of cases attended to by the four OPC sites in the Accra Metropolitan Health Directorate from 2013-2014 were three hundred and fifty two (352). The breakdown is as follows; Mamprobi: 40, Maamobi: 92, Ussher: 50, and Princess Marie Louise (PML):170 (Accra Metropolitan Health Directorate, 2014).

3.2.1 Demography

The population of the metropolis constitutes about 70% of Greater Accra Region’s population. That is, one million, eight hundred and fifty seven and five hundred and
fifty-seven (1,857,557) as at 2010 and projected by 3.1% growth (Accra Metropolitan Health Directorate, 2014).

3.2.2. Health Facilities and Provision

The Metropolitan area has five health sub-metros in the Accra Metro Health Directorate geographical area. They are Ablekuma, Ashiedu Keteke, Ayawaso, Okaikoi and Osu Clottey. However, by Local Government structure, Accra Metro Health Directorate’s geographical area has eleven (10) sub-metros. These are Ablekuma Central, Ablekuma South, Ablekuma North, Okaikoi South, Okaikoi North, Ayawaso West, Ayawaso Central, Ayawaso East, Osu Clottey and Ashiedu Keteke. Ablekuma has the largest land area with Ashiedu Keteke having the smallest (Accra Metropolitan Health Directorate, 2014).
The Figure 3.1, shows the map of the Accra Metropolitan Assembly.

Figure 3.1: Map of Accra Metropolitan Area

The metropolis has the following health facilities (Accra Metropolitan Health Directorate, 2014):

The study was therefore conducted at 4 OPC sites in the metropolis. These are Princess Marie Louise Hospital, Ussher Polyclinic, Mamprobi Hospital and Maamobi General Hospital.

3.3. Variables

Both dependent and independent variables were measured in this study.

3.3.1 Dependent variable

The dependent variable was quality of CMAM care measured as the recovery rate and clients’ (mothers of SAM children) satisfaction.

3.3.2. Independent variable

The independent variables measured in the study were:

1. Socio-demographic characteristics: age, weight etc. of SAM children/clients.

2. Structure: availability of trained staff, availability of routine drugs, supplies, availability of protocols and guidelines.

3. Process: provider-client interaction, providers’ skills in the use of standard guidelines and protocols, quality of counselling skills and health staff conduct of follow-up.

4. Outcome: proportion recovered and clients’ satisfaction.
3.4. Study Population

The study population included SAM children who had completed their treatment between 2013-2015 in the four (4) OPC sites. In addition, mothers / caretakers whose children had received CMAM services within 2013-2015 and were willing to participate in the study as well as health care workers who mainly provide the services were included in the study.

3.5. Sampling Procedure / Method

This study used the simple random sampling, which allowed for equal and independent chance of selecting the records of children who were diagnosed with SAM for the quantitative aspect of the study. A random number was selected between 1 and 10 using the number generator. The number 2 was generated. This aided the selection of the SAM children from the treatment register. This meant that the second, fourth, sixth … were selected to be part of the sample. This was done until all 352 SAM children who had completed treatment were selected.

The study also employed the purposive sampling, which focused on selection of samples dependent upon some considerations (Sage, 2015), as this was commonly used in qualitative studies. The records of children who were diagnosed as having SAM were selected randomly from the OPC register / books and treatment cards from January 2013 to January 2015 at the four (4) OPC sites in the metropolis. The treatment cards were selected by using their unique card numbers and cross-checked with OPC register / book,
the required information was recorded by using a checklist format. The treatment cards were only selected if they met eligibility criteria for inclusion.

3.5.1. Sample Size

The sample size was determined using single proportion population formula with the following assumptions: an average recovery rate in admitted under-five children with SAM to be 75% (Chane et al., 2014), 5% level of significance, and 5% as margin of error. Then it was calculated as follows:

\[
N = \frac{Z^2 P (1-P)}{D^2} = 288
\]

Where: \( N \) = sample size, \( Z \) = statistic for a level of confidence, \( P \) = expected proportion, \( D \) = precision.

A 5% was calculated on the 288 (which is 14) for missing or incomplete data and added to the sample size to give a final sample size of 302. Since there were 4 OPC sites in the metropolis with varying number of cases managed, samples were allotted to each OPC site using sampling proportionate to size based on individual reports. Data of 2013-2015 was used to determine the proportions of records to be reviewed in each OPC site. Total number of cases attended to was three hundred and fifty two (352). The breakdown been: Mamprobi: 40, Maamobi: 92, Ussher: 50, and Princess Marie Louise (PML):170. The proportion calculated among the OPC sites was as follows:
3.5.3. Selection of Facilities

The CMAM service is offered at health centers and CHPS compounds where severely malnourished children in the catchment area are treated. Five health facilities in the metropolis provide CMAM services. However, four of the facilities were selected for the study as only these four actively managed cases of severe malnutrition.

3.5.4. Inclusion criteria

The inclusion criteria were:

1. SAM children 6-59 months who had completed treatment with records from 2013-2015.

2. Mothers/caretakers of children with SAM who had benefitted from the CMAM programme from 2013-2015.

3.5.5. Exclusion criteria

The exclusion criteria were:

1. Children 6-59 months who were not SAM and children 6-59 months with SAM without records.
2. Mothers/caretakers of children without SAM.

### 3.6. Data collection Techniques / Methods and tools

Different tools were used to collect data for subsequent analysis in the study. The data were collected from 31st May to 6th July, 2016.

#### 3.6.1. Quantitative Data Collection Methods

Data was collected using quantitative methods.

#### 3.6.1.1. Standardised Checklist / Questionnaire for Quality of CMAM Services to SAM Children

Data for the study was collected from OPC treatment record cards of SAM children. The treatment cards contained information recorded at admission such as age of child, sex, distance from home to the OPC site, anthropometric measurements, physical examination, medical history, and routine medications. The treatment cards also had records on the amount of RUTF (Plumpy’Nut) ration given to the children weekly until they got discharged, anthropometric measurements at follow-ups, action taken and outcome status. All these data were extracted from the treatment cards.

The standardised checklist / questionnaires helped to gather/extract information on quality of CMAM services. That is, a checklist was used to design a structured questionnaire with open and closed-ended questions to retrieve information regarding the quality of services based on the Donabedian’s framework of health care quality assessment. The questionnaire had three sections. Section A: Structural indicators:
availability of trained staff, availability of routine drugs, equipment and supplies, availability of protocols and guidelines and supervision. Section B: Process indicators: provider-client interaction, providers’ skills in the use of standard guidelines and protocols, quality of counselling skills and health staff conduct of follow-up. Section C: Outcome indicators: proportion recovered clients’ satisfaction.

Thus, a standardised checklist for assessment of quality CMAM-OPC services, which has been used in Ghana, was adapted for the study. This checklist is an approved tool by the Ghana Health Service (GHS, 2012). This was used to assess the structural, process and outcome indicators needed to provide quality CMAM services. The quality of service was determined based on whether facilities met the minimum sphere standard of 75% recovery rate set for management of SAM (Sphere, 2011) as well as having available resource as at the time of study for the delivery of CMAM care.

3.6.2. Qualitative Data Collection Methods

Different strategies were applied to collect qualitative data. These included records review (documentary review), observation and focus group discussions (FGDs). Semi-structured interview guide was used for focus group discussion with twenty six (26) mothers/caregivers whose children had benefitted from the CMAM services at the OPC sites. Using the convenience sampling strategy, mothers/caretakers of children who had benefitted from the CMAM services from 2013-2015 were selected for the focus group discussion. This involved using participants who are readily available for a study (Polit & Beck, 2010). Thus, depending on the number available and willing to participate
during the period of data collection, twenty-six (26) clients (mothers of SAM children) were involved. The focus was on their perceptions of quality of CMAM care. The strategies have been explained below.

*Focus Group Discussion (FGD)*

A focus group discussion (FGD) guide adapted from Puett *et al.* (2013), who carried out a similar study using service indicators where caretakers settled on their own indicators of quality care and ordered them according to their perceived importance was developed and used to guide face-to-face discussions with mothers. Three FGD sessions were organised. The FGDs were conducted on the premises of the facility. This enabled participants to freely participate. The guide was translated into a local language (Twi) common to all mothers to ensure homogeneity and accuracy of discourses. In the course of the FGD, notes were taken and discussions audio recorded. The discussions centered on the processes of care, relationship with health providers and their experiences of care. The discussions were held at places and times convenient to the participants. Each discussion lasted for about 20mins.

*Participant Observation*

Participant observation involved non-active involvement of the researcher. This entailed observation of CMAM sessions during data collection period was also done to verify assertions made by clients regarding quality of CMAM service. An observation of the process of the management of SAM was also done during the field study.
Review of records

Review of records was conducted for eligible SAM children. The review of records involved assessment of case management notes for the completion of basic tasks considered to be crucial in the management of SAM children. These included documentation of weight, MUAC, presence of bilateral pitting oedema, temperature, respiratory rate, anaemia/pallor, superficial skin infection, dehydration, presence of danger signs (diarrhoea, vomiting and fever), appetite, routine medication given and RUTF given.

3.7. Pre-test of Questionnaire

A pre-test of the questionnaires was done at a new OPC site created in the Osu-Clottey area with similar characteristics to those selected for the main study. This helped to confirm the usefulness/effectiveness of the questionnaires as well as to validate the appropriateness of the tool. Feedback generated from the pre-testing exercise before data collection started helped in the improvement of the tool.

3.8. Data Quality Assurance

The data collection checklist was adapted from the Ghana Health Service supervision tool for quality CMAM services (GHS, 2012) to address the study variables. Before data collection, training was given for a day for data collectors/research assistants (3) on how to collect information. This was done by practising how to fill the checklist with samples of patient treatment records. This was interviewer-administered by the researcher/
research assistants. For completeness and consistency of data during data collection, the principal investigator and supervisor went through the questionnaires for thorough checks before receiving the filled questionnaire from each data collector on daily basis. The qualitative aspect (FGDs) was done by the researcher. Thus, the focus group discussions were facilitated by the researcher.

3.9. Data Analysis

Both quantitative and qualitative data analysis (es) strategies were applied in the study as explained below.

3.9.1. Quantitative Data Analysis

Data from the checklist/questionnaires were entered into Epi-Info version 7.0, cleaned and exported to STATA version 13.0 for analysis. Data was carefully analysed to check for missing values and outliers. Results were presented using tables. A test of proportion was used to determine whether there were significant differences between the dependent variables and the independent variables. Logistic regression models were also used to identify strengths of associations between the dependent and independent variables.

3.9.2. Qualitative Data Analysis

The qualitative data analysis was done using thematic framework approach. The guide was prepared based on the themes to be addressed hence the opinions gotten from each discussion was analysed thematically allowing the researcher the flexibility of establishing significant patterns. The thematic analysis was guided by the steps described
by Braun and Clarke (2006). These are familiarisation, coding, categorisation and interpretation as explained below.

3.9.3. Familiarisation
The first step of thematic analysis is familiarisation with data where the data was repeatedly read over after transcription to allow for a better understanding of the data gathered (Braun & Clarke 2006). This was achieved through the reading of field notes, listening to audio recorded discussions and transcribing recordings into Microsoft word.

3.9.4. Coding
The coding process was done after familiarization with data. Detailed descriptions were then used in summarizing identified themes that best explained the phenomenon in the study. As described by Saldana (2009), the code outlines relevant expressions in the language-based data.

3.9.5. Categorisation
Coded data with similarities were categorised into themes for analysis. These themes represented connotations derived from responses of participants (Braun & Clarke 2006). This was to ensure that the themes were in line with the objective to be explored.

3.9.6. Interpretation
An in-depth description of the categorized data was then done to give meaning to the data gathered. Interesting quotes that best described the different categories were presented.
3.10. Ethical Clearance / Access

Ethical clearance was obtained from Ghana Health Service Ethic Review Committee.

3.10.1. Approval of Study Area

The study was conducted in the Accra Metropolitan Area in Greater Accra Region. Prior to the study, the researcher made informal contacts with the management of the Accra Metropolitan Health Directorate. An introductory letter by the Head of Department of Health Policy, Planning and Management, School of Public Health, College of Health Sciences, University of Ghana, was sent to the Regional health Directorate then to the Metropolitan Health Directorate to seek permission for the study to be carried out in their facilities implementing CMAM. Furthermore, a copy of the GHS Ethical clearance was also sent to the Health Directorate serving as a proof of approval for the study to be undertaken.

3.10.2. Description of subjects involved in the study

The research participants included children between 6-59 months who had records at the facilities and had been diagnosed and treated for severe acute malnutrition, health professional providing the services and care takers whose children were benefiting from the Community-based Management of Acute Malnutrition (CMAM) services.

3.10.3. Participant Informed Consent

Participants, including mothers / caretakers were assured of confidentiality of the information provided such that all responses were anonymised. The purpose of the
research was explained so as to assure them that the study was for academic purpose and served their general interests. A participant consent form was designed to seek their explicit / implied informed consent before participation in the study (see appendix A). Consent was obtained from the mothers as well as health officers in charge of the OPC sites before interviewing, reviewing of records and conducting observations during clinic sessions. Participants were also informed of the expected inconvenience to them as a result of the time taken for the discussion. Potential risk or benefits were explained to participants taking part in the study. Participation in the study was voluntary. To guarantee the privacy of participants, they were made to understand that their names would not be included in the report. All the information that was gathered from participants would be kept strictly confidential. Anonymity for all records reviewed was maintained.

3.11. Chapter Summary

This chapter described the study area and the methodology adopted for the study. It provided in- depth explanation to both quantitative and qualitative research methods used in the assessment of the quality of CMAM outpatient care services in Accra Metropolitan Area. The next chapter discusses the results of the study.
CHAPTER FOUR
RESULTS AND ANALYSIS OF FINDINGS

4.0. Introduction

This chapter presents results and analysis of the findings of the research undertaken. The results were analysed in line with the objectives of the study. Themes developed from verbatim transcripts have also been discussed. The chapter is in two main sections: the providers’ perspective and the clients/mothers/caregivers’ perspective on the quality of care of CMAM services. Each of these has sub-sections. The following sub-sections come under quantitative results: Characteristics of the study participants, nutrition indicators of children, proportion of SAM children for whom case management task were performed and recorded by health provider, and assessment of the structural, process and outcome indicators of the (CMAM) care. The following sub-section falls under the qualitative findings: Mothers perception of quality of CMAM care services.

4.1. Quality of Care- Providers’ Perspective

This section presents the results of the study in relation to providers’ perspective on the quality of CMAM care.

4.1.1. Characteristics of the study participants

Analysis of the background characteristic was based on the review of the records obtained on children who accessed the community-based management of acute malnutrition (CMAM) care during the period under review (2013-2015). The standards set for measuring their characteristics were used as displayed in table 4.1. The mean
(±SD) age of the children who were admitted was 14 (±8) months while the median age was 12 months. Majority of children who were admitted were below age 24 months. Out of the total 302 admitted children, 230 (76.2%) of them had history of time travelled to the facility for services. Of the 230, about 52.2% had to travel within 30 minutes to access care and the rest (47.8) had to travel more than 30 minutes to access services. The mean (±SD) length of stay (weeks) in CMAM care was 4.4 (±3.1). Marasmus indicated as MUAC < 11.5cm (71.2%) was the leading cause of admission followed by, what is locally known as Kwashiorkor (Bilateral Pitting Oedema) which was (6.3%).

Table 4.1: Characteristics of the study participants (N=302)

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age (months)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6-11</td>
<td>142</td>
<td>47.0</td>
</tr>
<tr>
<td>12-23</td>
<td>121</td>
<td>40.1</td>
</tr>
<tr>
<td>24-59</td>
<td>39</td>
<td>12.9</td>
</tr>
<tr>
<td><strong>Sex</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>176</td>
<td>58.3</td>
</tr>
<tr>
<td>Female</td>
<td>126</td>
<td>41.7</td>
</tr>
<tr>
<td>Father Alive</td>
<td>282</td>
<td>93.4</td>
</tr>
<tr>
<td>Mother Alive</td>
<td>285</td>
<td>94.4</td>
</tr>
<tr>
<td><strong>Time to travel to facility (mins.)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean (SD)</td>
<td>39.5 (28.5)</td>
<td></td>
</tr>
<tr>
<td><strong>Admission</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct from Community</td>
<td>34</td>
<td>11.3</td>
</tr>
<tr>
<td>Referral from health facility</td>
<td>140</td>
<td>46.4</td>
</tr>
<tr>
<td>Referral from inpatient care</td>
<td>101</td>
<td>33.4</td>
</tr>
<tr>
<td><strong>Admission Criteria</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bilateral Pitting Oedema</td>
<td>19</td>
<td>6.3</td>
</tr>
<tr>
<td>MUAC &lt; 11.5cm</td>
<td>215</td>
<td>71.2</td>
</tr>
<tr>
<td>Others</td>
<td>6</td>
<td>2.0</td>
</tr>
<tr>
<td><strong>Average length of stay</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean (SD)</td>
<td>4.4 (3.1)</td>
<td></td>
</tr>
</tbody>
</table>
4.1.2. Nutrition indicators of children

Notwithstanding the varying grades of oedema, all oedematous children (6.3%) had their oedema completely resolved in the first week of stay.

Table 4.2: Nutrition indicators of children (N=302)

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Admission</th>
<th>Discharge</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N (%)</td>
<td>N (%)</td>
<td></td>
</tr>
<tr>
<td>Oedema</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No oedema</td>
<td>282 (93.4)</td>
<td>226 (74.8)</td>
<td>0.001</td>
</tr>
<tr>
<td>+</td>
<td>16 (5.3)</td>
<td>0</td>
<td>-</td>
</tr>
<tr>
<td>++</td>
<td>2 (0.7)</td>
<td>0</td>
<td>-</td>
</tr>
<tr>
<td>+++</td>
<td>1 (0.3)</td>
<td>0</td>
<td>-</td>
</tr>
<tr>
<td>MUAC (cm)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean (SD)</td>
<td>11.2 (1.8)</td>
<td>12.4 (1.0)</td>
<td>0.001</td>
</tr>
<tr>
<td>Severe (&lt;11.5 cm)</td>
<td>227 (75.2)</td>
<td>31 (10.3)</td>
<td>0.001</td>
</tr>
<tr>
<td>Moderate (11.5 to &lt;12.5 cm)</td>
<td>58 (19.2)</td>
<td>54 (17.9)</td>
<td>0.6754</td>
</tr>
<tr>
<td>Normal (≥ 12.5 cm)</td>
<td>16 (5.3)</td>
<td>139 (46.0)</td>
<td>0.001</td>
</tr>
<tr>
<td>Weight (kg)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean (SD)</td>
<td>6.2 (2.3)</td>
<td>7.4 (1.8)</td>
<td>0.001</td>
</tr>
</tbody>
</table>
The mean (±SD) weight of severe acute malnutrition (SAM) children at admission was 6.2 kilograms (±2.3) whereas at discharge was 7.4 kilograms (±1.8) respectively. The mean (± SD) mid upper arm circumference (MUAC) of SAM children at admission and discharge were 11.2 (±1.8) and 12.4 (±1.0) respectively (see table 4.2). The data captured under this research presented a significant difference between absence of oedema at both admission and discharge levels. The MUAC indicator was grouped and analysed across 3 categories: severe, moderate and normal respectively. After test of differences in proportions, all but the moderate category (\(p<0.6754\)), showed significant differences at admission and discharge levels (\(p<0.001\)).

4.1.3. Quality of case management - Proportion of SAM children for whom case management were performed and recorded by health provider

Health provider management of cases of SAM without complications according to algorithm was of high quality as majority of assessed records showed that each required task performed was above 70%. Results are summarized in table 4.3. All SAM children (100%) had their weight, MUAC and oedema checked and recorded (complete documentation) at admission unlike at discharge where about three-quarters had their weight, MUAC and oedema checked and recorded. Very few records of children (6.6%) with SAM also had routine medication recorded. This was attributed to children having to go through consultation at the OPDs. From observation of 20 cases as at the time of the study, most case management tasks were performed. However, checking for oedema, respiration, dehydration and anaemia was not done. Appetite test was conducted for only 4 (20.0%) of the observed cases.
Table 4.3: Quality of case management - Proportion of SAM children for whom case management were performed and documented by health provider

<table>
<thead>
<tr>
<th>Task to be undertaken according to CMAM protocol</th>
<th>No. of records (%)</th>
<th>No. observed at time of study (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>N=302</td>
<td></td>
<td>N=20</td>
</tr>
<tr>
<td><strong>Nutrition Assessment</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight taken and recorded</td>
<td>302 (100.0)</td>
<td>224 (74.2)</td>
</tr>
<tr>
<td>MUAC taken and recorded</td>
<td>302 (100.0)</td>
<td>224 (74.2)</td>
</tr>
<tr>
<td>Oedema checked and recorded</td>
<td>302 (100.0)</td>
<td>226 (74.8)</td>
</tr>
<tr>
<td>Presence of diarrhoea checked and recorded</td>
<td>296 (98.0)</td>
<td>218 (72.2)</td>
</tr>
<tr>
<td>Presence of vomiting checked and recorded</td>
<td>297 (98.3)</td>
<td>222 (73.5)</td>
</tr>
<tr>
<td>Presence of fever checked and recorded</td>
<td>293 (97.0)</td>
<td>219 (72.5)</td>
</tr>
<tr>
<td>Presence of cough checked and recorded</td>
<td>284 (94.0)</td>
<td>219 (72.5)</td>
</tr>
<tr>
<td>Body temperature taken and recorded</td>
<td>289 (95.7)</td>
<td>205 (67.9)</td>
</tr>
<tr>
<td>Respiratory rate taken and recorded</td>
<td>259 (85.8)</td>
<td>184 (60.9)</td>
</tr>
<tr>
<td>Dehydration checked and recorded</td>
<td>297 (98.3)</td>
<td>221 (73.2)</td>
</tr>
<tr>
<td>Anaemia checked and recorded</td>
<td>297 (98.3)</td>
<td>220 (72.9)</td>
</tr>
<tr>
<td>Superficial skin infection assessed and recorded</td>
<td>297 (98.3)</td>
<td>221 (73.2)</td>
</tr>
<tr>
<td>Child’s appetite checked by conducting RUTF test and stated</td>
<td>299 (99.0)</td>
<td>227 (75.2)</td>
</tr>
<tr>
<td><strong>Classification</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Correctly classified</td>
<td>302 (100.00)</td>
<td>-</td>
</tr>
<tr>
<td><strong>Treatment</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provision of RUTF and recorded</td>
<td>294 (97.4)</td>
<td>214 (70.9)</td>
</tr>
<tr>
<td>Routine Medication recorded</td>
<td>20 (6.6)</td>
<td>-</td>
</tr>
</tbody>
</table>
4.1.4. Structure, Process and Outcome of CMAM care

Results obtained in relation to the assessment of the structure, process and outcome of the CMAM care are presented below. Observation of the four CMAM sites was carried out using a checklist. This also provided the opportunity for the researcher to ask questions for clarifications from the health care providers who were available. Some of their responses have been quoted to support the analysis accordingly.

4.1.4.1. Structure

The Donabedian model groups resources in the health system under structure when assessing quality of care. Results of the following structural indicators: availability of trained staff, availability of routine drugs, equipment and supplies, availability of protocols/guidelines and supervision, assessed are presented.

4.1.4.1.1. Availability of trained staff

All four CMAM outpatient sites visited had 50% of staff formally trained (4 trained nutrition officers) on CMAM. The other 50% had been trained on the job to provide care (3 untrained nutrition officers and a community health nurse). Though there was trained staff at the outpatient care (OPC) sites, they complained of not receiving refresher training for the past two or more years. A number of them who had received training were also not practicing. For instance, one nutritionist at the OPC site said:

‘...People get trained yet they don’t practice it... There are also people who are providing services, but have not received training...This makes the work difficult...We always have to refer some of our cases... ’ (HW-1).
4.1.4.1.2. Availability of routine drugs, equipment and supplies

It was observed that routine drugs and supplies were available at all the four OPC sites. Three of the OPC sites had about 50% of the stock of RUTF except for one which did not have any at the time of visit. Medications such as anthelmintic, antimalarial, antibiotics and others were seen stocked at the facility pharmacy. Functioning weighing scales and thermometers for children were available at the outpatient sites except for one site which had to send children to the outpatient department of the hospital to weigh the children because of a malfunctioning weighing scale. MUAC tapes were also available at the time of the visit. However, there was a shortage of treatment cards at all the four sites. Therefore, health providers had to improvise by making photocopies to use.

4.1.4.1.3. Availability of Protocols/Guidelines

The CMAM program has provided protocols and guidelines for use by facilities. This is to ensure consistency and improve quality of care that meets international standards. It was observed that all the outpatient sites visited had the required protocols and guidelines. These had been displayed either as desk covers or wall charts. The following protocols were identified:

1. Outpatient Care Action Protocol  
2. Key Messages Upon Admission  
3. Manual and guidelines on CMAM  
4. Admission and discharge criteria chart  
5. RUTF look-up table
During observation for availability and use of these protocols, it was observed that all the health facilities visited were using these protocols and guidelines for the provision of services. For instance, the RUTF look-up table was the commonest used protocol for reference as at the time of observation. There is no denying the fact that protocols are important as they serve as a quick reference for the health worker, they become very handy when urgently needed.

4.1.4.1.4. Supervision

Supervision plays a key role in ensuring the quality of service rendered to clients. It also serves as motivation for staff to put in their very best in the delivery of services. Staff at outpatient care sites informed that there was a gap in supervision. These were some responses elicited from the open ended questions on the checklist by health providers:

‘...As for supervision, it is better we don’t talk about it... At least, a support visit will serve as a motivation for some of us who have worked all this while...’ (HW-4).

‘...I expect that when people are trained, there is the need to follow up to check to see if the right things are being done, but it is not so...’ (HW-2).

From the observation and discussion with the health providers, it was noted that they were hardly supervised.
4.1.4.2. Process

The actual health care activities (or implementation) form the basis of the process indicator of the quality care model. The process indicator focuses on what is done for clients in the delivery of care. The results of the process indicators analysed include the following: provider-client interaction, adherence to protocols/guidelines, nutrition information provision and follow up mechanism.

4.1.4.2.1. Provider Client Interaction

From the observation, the health providers interacted very well with clients. All clients who visited the facility were warmly welcomed and treated in a friendly manner. The health providers were seen listening to clients and empathizing with them where necessary. Staff were observed telling caregivers about the condition of their children and reminded mothers to visit the nearest facility should the child’s condition worsened.

4.1.4.2.2. Adherence to protocols and guidelines

From the observation and records review, it was clear that health providers were adhering to protocols and guidelines in managing SAM cases. The protocols and guidelines recommend that health providers should undertake medical history, anthropometry (MUAC and weight) and assessment of bilateral pitting oedema, physical examination, treatment, monitoring and organisation function (referral and documentation). These tasks according the guidelines are to be performed on every visit that the client makes to the facility. From the observation, health providers performed almost all these requirements as expected.
However, they were not seen assessing for bilateral pitting oedema during the visit to the clinics. It was observed that assessment for bilateral pitting oedema was not done at subsequent visits rather it was done only at first visit to the facility. Even the review of records showed that not all tasks in the protocols and guidelines were duly followed. Most of the records had incomplete documentation, especially for subsequent visits made to facilities unlike on admission when protocols and guidelines were duly followed (refer to table 4.3).

4.1.4.2.3. Nutrition Information Provision
Nutrition information was regularly provided to caregivers upon observation. Health providers delivered key messages such as feeding the child on variety of family foods and continuing with breastfeeding for children for 6-24 months, washing hands and that of the child before feeding the child, and offering the child plenty of clean safe water to drink or breast milk while he/she is taking RUTF. The provision of nutrition information was given individually to mothers during counselling, which could last at least 15 minutes. This was seen in almost all facilities visited except for one facility that did not have clients at the time of the study.

4.1.4.2.4. Follow up mechanism
For follow up mechanisms, health providers told caregivers when to return for next visits as well as reminded them to seek services when the child’s medical condition worsens. However, it was informed that health providers did not make regular household visits to follow up on children who had visited the facility. Upon interaction with health
providers, it was made clear that follow up was a challenge as there were no funds allocated for such an activity. A discussant made this statement:

‘…. Follow up visits are not done... no funds, sometimes; I have to use my own money to visit some people when I close from work...’ (HW-2).

Doing this would afford the health providers the opportunity to see how clients were responding to treatment and to offer counselling on proper care of the child.

4.1.4.3. Outcome

The outcome is a measurable aspect of the quality of care model. It determines the effect of the care on the health status of the patient. It also includes satisfaction derived from the care received by the patient. The outcome indicators of interest assessed were the recovery rate and client satisfaction. The results are presented below.

4.1.4.3.1. Recovery Rate

Results indicated on table 4.4 shows that the rate of recovery of SAM cases (attaining MUAC ≥12.5cm) was 62.0% as compared to the international sphere standard of >75.0% being acceptable and <50.0% being alarming. While this rate is lower than the ‘acceptable’ standard, it was above the ‘alarming’ standard. The probable causes were explored.
Table 4.4: Comparison of outcome indicator with international SPHERE standard (N=224)

<table>
<thead>
<tr>
<th>Outcome Indicator</th>
<th>N (%)</th>
<th>SPHERE standards</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recovered</td>
<td>139 (62.0)</td>
<td>&gt; 75.0%</td>
</tr>
<tr>
<td>Not recovered</td>
<td>85 (38.0)</td>
<td>&lt; 50.0%</td>
</tr>
</tbody>
</table>

From interactions with the health providers on why such a low recovery rate, they attributed it to inability of clients to regularly visit the facility due to issues regarding transportation. It was understood that some of the clients lived some kilometers away from the facilities. Thus, the cost of transportation to and fro was an issue if the mother was not gainfully employed. In addition, stigmatization was said to also play a role in hindering clients from fully accessing services during treatment. It was understood that the perception of community members of mothers who access the CMAM services was that they could not properly feed their children, hence, the child’s condition and referral. This was what a health provider had to say on the issue of stigma:

‘... Even health workers stigmatise them, they tell mothers whose children are malnourished to go to the kwashiorkor [CMAM] centre... When mothers hear this, it demoralises them and as such they will only come once or twice and stop coming... At times, they don’t want other mothers to see them come for the services...’ (HW-3).

Some health providers again attributed it to the fact that though the CMAM service was free, clients had to pay for consultation and routine medications if they were not insured. This contributes to most children defaulting or not continuing treatment.
‘...I referred a mother to go to the consulting room but because she did not have NHIS, she was not attended to...so I had to go and plead on her behalf for the medical doctor to see to her child and again lobby for medications for her at the pharmacy...’ (HW-2).

It was also revealed that other reasons had to do with the non-compliance with care by the caretakers:

‘...As soon as mothers see a little improvement in their children, they either stop coming or don’t come regularly...’ (HW-2).

Mothers’ compliance with the requirements of CMAM services such as regular visits to the OPC sites would improve if efforts were made to make the services easily accessible.

4.1.4.3.2. Association between recovery and age and sex of the child (Logistic regression analysis)

A logistics regression analysis was conducted to establish the association between recovery and age as well as sex of the children. The results are outlined in table 4.5.
Table 4.5: Association between recovery and age and sex of the child (Logistic regression analysis)

<table>
<thead>
<tr>
<th></th>
<th>Unadjusted OR (95% CI)</th>
<th>p-value</th>
<th>Adjusted OR (95% CI)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age of child (months)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6-11</td>
<td>ref</td>
<td></td>
<td>ref</td>
<td></td>
</tr>
<tr>
<td>12-23</td>
<td>2.00 (1.11, 3.63)</td>
<td>0.041</td>
<td>2.01 (1.11,3.65)</td>
<td>0.050</td>
</tr>
<tr>
<td>24-59</td>
<td>2.04 (0.86, 4.87)</td>
<td></td>
<td>1.91 (0.79,4.59)</td>
<td></td>
</tr>
<tr>
<td><strong>Sex of child</strong></td>
<td></td>
<td>0.204</td>
<td></td>
<td>0.257</td>
</tr>
<tr>
<td>Female</td>
<td>ref</td>
<td></td>
<td>ref</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>1.42 (0.82, 2.47)</td>
<td></td>
<td>1.38 (0.64,1.56)</td>
<td></td>
</tr>
</tbody>
</table>

The results indicate that recovery was associated with age of child ($p<0.041$) with older children (12-59 months) having higher odds of recovery. Ages 12-23 months and ages 24-59 months have 2.00 and 2.04 times odds of recovery respectively.

4.1.4.3.3. Client Satisfaction

The satisfaction of clients with the services received is necessary to establish quality of CMAM care. This was assessed from the perspectives of both the health providers and mothers. This part presents how health providers perceived of the satisfaction that mothers derived from accessing the services for their children.

Generally, health providers agreed that the CMAM program was good and that it is one of the few health programs that clients were able to see immediate results after been enrolled. They also agreed to the fact that clients appreciated the fact that the service was
free, especially with the provision of free RUTF as well as the quality of care provided.

Some health providers had this to say:

‘...Because they receive free services, and especially for the quantity of RUTF given them freely which they identify as the most appropriate for the condition, they appreciate the program a lot...’ (HW-2).

‘...Mothers sing lots of praises to us because of the quick improvement they see in their children when they are put on the RUTF...’ (HW-4).

Their views to a large extent confirmed the way clients perceived the satisfaction they derived from the quality care received.

4.2. Quality of Care- Clients/Mothers/Caregivers Perspective

This section presents the findings of the qualitative interview as analysed using the appropriate techniques.

4.2.1. Participants’ demographic characteristics

Twenty-six (26) participants took part in the three (3) focus group discussions. They were all above the age of 20 years. Majority, 15 (57.7%) of the mothers were unemployed. The rest 11 (42.3%) who were employed were either traders or hairdressers. Of all who participated in the focus group discussion, 20 (76.9%) were married while 6 (23.1%) were not married.
Table 4.6: Participants’ demographic characteristics

<table>
<thead>
<tr>
<th>Code</th>
<th>Age</th>
<th>Marital status</th>
<th>Occupation</th>
<th>Code</th>
<th>Age</th>
<th>Marital status</th>
<th>Occupation</th>
<th>Code</th>
<th>Age</th>
<th>Marital status</th>
<th>Occupation</th>
</tr>
</thead>
<tbody>
<tr>
<td>M1</td>
<td>20</td>
<td>single</td>
<td>unemployed</td>
<td>M1</td>
<td>23</td>
<td>single</td>
<td>trader</td>
<td>M1</td>
<td>25</td>
<td>married</td>
<td>trader</td>
</tr>
<tr>
<td>M2</td>
<td>25</td>
<td>single</td>
<td>hairdresser</td>
<td>M2</td>
<td>25</td>
<td>married</td>
<td>unemployed</td>
<td>M2</td>
<td>24</td>
<td>married</td>
<td>trader</td>
</tr>
<tr>
<td>M3</td>
<td>24</td>
<td>married</td>
<td>unemployed</td>
<td>M3</td>
<td>28</td>
<td>married</td>
<td>trader</td>
<td>M3</td>
<td>24</td>
<td>married</td>
<td>unemployed</td>
</tr>
<tr>
<td>M4</td>
<td>35</td>
<td>single</td>
<td>trader</td>
<td>M4</td>
<td>22</td>
<td>single</td>
<td>unemployed</td>
<td>M4</td>
<td>26</td>
<td>married</td>
<td>hairdresser</td>
</tr>
<tr>
<td>M5</td>
<td>31</td>
<td>married</td>
<td>trader</td>
<td>M5</td>
<td>27</td>
<td>married</td>
<td>unemployed</td>
<td>M5</td>
<td>22</td>
<td>married</td>
<td>hairdresser</td>
</tr>
<tr>
<td>M6</td>
<td>34</td>
<td>married</td>
<td>unemployed</td>
<td>M6</td>
<td>35</td>
<td>married</td>
<td>unemployed</td>
<td>M6</td>
<td>20</td>
<td>married</td>
<td>unemployed</td>
</tr>
<tr>
<td>M7</td>
<td>45</td>
<td>married</td>
<td>trader</td>
<td>M7</td>
<td>32</td>
<td>married</td>
<td>trader</td>
<td>M8</td>
<td>30</td>
<td>married</td>
<td>trader</td>
</tr>
<tr>
<td>M8</td>
<td>31</td>
<td>single</td>
<td>unemployed</td>
<td>M9</td>
<td>50</td>
<td>married</td>
<td>unemployed</td>
<td>M10</td>
<td>41</td>
<td>married</td>
<td>trader</td>
</tr>
<tr>
<td>M9</td>
<td></td>
<td></td>
<td></td>
<td>M11</td>
<td>24</td>
<td>married</td>
<td>trader</td>
<td>M12</td>
<td>28</td>
<td>married</td>
<td>trader</td>
</tr>
</tbody>
</table>

4.2.2. Mothers’ Perception of Quality of Care of CMAM Services

Interactions with mothers as evident in the focus group discussion showed that they were satisfied with the services received. Numerous themes emerged from discussions with mothers / caretakers in relation to their perceptions of the quality of care of the CMAM services. These themes were grouped under the structure, process and outcome of quality of care. They were then organised under provision of RUTF, interpersonal relationship
with health providers, provision of information, competence of health providers, nutrition
service provision and follow up mechanisms.

4.2.2. Structure

The quality of care model indicates that the structure helps to evaluate the availability of
staff, their respective competencies, infrastructure and equipment that assist health
providers to provide services. How mothers/caretakers perceived the contribution of
these to the quality of CMAM care for their children have been presented below.

4.2.2.1. Competence of health providers

Mothers / caregivers shared various opinions about the care given them by health
providers. According to them, the health providers had knowledge and skills needed to
get their children well. They expressed so much confidence in the health providers.

Some mothers shared their experiences:

‘...In fact, as for me, I don’t know what would have happened to my son if I
had not been directed here from weighing (child welfare clinic)... They know their
work...from her examination, she was able to tell that my baby was swollen and
needed doctor’s attention, even though I did not see it myself’ (M1-FGD2).

‘...Because of their knowledge and training, they are able to take good care of
our children...’ (M3-FGD2).

Caregivers said the health providers knew their work very well. They were satisfied with
the kind of care provided them because they believed that health providers had undergone
requisite training and education. This ‘learnedness’ motivated caregivers’ trust in the
health providers. For that reason, like many patients, they perceived quality of care on the basis of how health providers essentially performed their roles.

4.2.2.2. Process

The process as one of the key indicators of quality of care model shows how the actual activity is performed for the client. This is where the health provider gets the opportunity to interact with the client when providing the service. Some key activities that mothers/caregivers thought were helping to enhance their satisfaction have been analysed and presented.

4.2.2.2.1. Information Provision

Generally, clients (caretakers) had no worry understanding information provided by the health providers. Clients expressed satisfaction with the information provided them as all participants were given information on their child’s health condition. This demystified their perception that their child’s health condition was as a result of spiritual attack known as “Asram”. Within the communities, people have the traditional understanding that when a child is malnourished, it means that they are manifesting a spiritual attack due perhaps to the ills of their parents. A mother threw more light on this concept:

‘…Madam, if I had not come to this place, I would not have known that what was happening to my son was not spiritual (Asram) but that it had to do with my child’s weight which was not good... I have really learnt a lot...We want the services to go everywhere...’ (M7-FGD3).
The mothers / caretakers indicated that they were also told to feed their children with variety of foods and also to practice proper hygiene. Caretakers treasured all information given by the health providers in relation to both counselling and feedback on feeding and care practices. A mother described her experience:

‘…[Laughing] We were given information on feeding our children with varieties of foods… We were also advised not to give the groundnut (RUTF) to other children at home because it is medicinal...We were told to give more water to the child when feeding him/her with the groundnut…’ (M5-FGD1)

Another mother said:

‘…The madam told us a lot of things and I learnt a lot...They told us that if we give our children the groundnut to eat and also feed them well, the children will increase in weight and this is true... I saw improvement in my child’s weight when I started giving the groundnut to her…’ (M2-FGD3).

A different mother also said:

‘... I put all what the nurses told me into practice and this was the reward [showing her son]. My son recovered quickly than I expected…’ (M4-FDG3).

All these confirm that regardless of the fact that mothers are interested in their children getting better, they also expect to be well informed about what is wrong with their children and what is expected to be done to improve their health.
4.2.2.2.2. Provision of RUTF

Mothers / caregivers expressed the view that they were always provided with weekly ration of the RUTF to feed their children. They expressed the opinion that their children liked the RUTF more easily than their regular food though a few expressed the contrary view that they sometimes refused it. Some mothers explained the benefits of the RUTF towards the development of their children as well. These were what some mothers had to say:

‘... As for me, the groundnut (RUTF) helped my daughter to be able to get up and walk...’ (M2-FGD2).

‘... [Laughing] For the first three weeks of my stay in the program, my son who could not walk started walking after taking the groundnut...’ (M3-FGD2).

‘... My son did not like the groundnut at the early stages of treatment but when he started liking it, I always had to hide it from him if not, he would go for it and eat without my knowledge [laughing]’...(M8-FGD3).

‘...Even after discharge children still want RUTF, than the other foods...’ (M10-FGD3).

The economic benefits of the program to the mothers/caregivers were also revealed. It is an ‘open secret’ that in most cases, the economic conditions of a particular family could have an influence on a child’s nutritional development and status. For example, a mother
who is unemployed may find it difficult to provide nutritious diets to the child upon weaning them. Consequently, the institution of the CMAM program was seen as a timely intervention for families facing economic challenges:

‘...I am not working so I have no money to buy other foods, so the groundnut they give has really helped me...’ (M8-FGD2)

All these expressions about the RUTF point to the fact that mothers recognized the need for this treatment and accepted that RUTF was more suitable for the child’s condition. The key message from the above was that had this not been free, most mothers would have had challenges acquiring/procuring them.

4.2.2.2.3. Nutrition service provision

Many mothers perceived quality of care based on how health providers go about their duties when they access services. The following were outlined as some of the services that were provided to them when they visited the OPC sites.

1. Measurement of the mid upper arm circumference with a coloured tape.
2. Weighing.
3. Counselling.
4. Checking for dehydration.
5. Checking temperature.
6. Checking breathing.
7. Giving of RUTF.
8. Education on hygiene.
9. Education on giving family foods.

10. Education on how to feed the RUTF.

11. Follow up calls (sometimes).

Mothers expressed satisfaction with the services they received. One mother shared her experience as:

‘...They are doing their very best... Anytime we come, they take time to measure their arms and weigh the children... They always check their temperature even if the children are not hot....’ (M6-FGD3).

The mothers were seen to be satisfied with the actual performance of the services for their children by the health providers.

4.2.2.2.4. Interpersonal relationship

It is an accepted fact that clients of health care services have limitations when it comes to measuring technical aspect of quality of care. In this respect, clients base much of their assessment on the interpersonal relationship they get from health care providers during service delivery. Interestingly, mothers appreciated health providers’ friendly and all-embracing behaviour contrary to wrong impressions by people about health providers being rude and unfriendly. Mothers expressed the view that they were treated with utmost respect and kindness:

‘...The health providers were very friendly and cordial... As for this alone, we will give them excellent...’ (M5-FGD2).
‘... At this place, nurses don’t shout at us, they pamper us and relate to us as a family unlike when you go to some places...’ (M6-FGD3).

‘...I like the way they relate to me... When they see me they will always ask about how my son is doing... ’ (M7-FGD2).

This indicates the value that clients place on interpersonal relationship when it comes to quality of care. For instance, clients usually perceive that the health care providers’ respect for their dignity is very important than the availability of sophisticated medical equipment at the health facility.

4.2.2.2.5. Follow up mechanism

Due to peculiar environmental conditions of people in the communities, it is important that health providers put in place a follow up system to ensure that mothers/clients continue with the program and adhere to the regimen of the CMAM care program. It was evident that the health providers had instituted a telephone call as a follow up mechanism for clients under the program:

‘...She could call me and tell me to come for the next visit.... ’ (M1-FGD3).

Though mothers expressed the opinion that they were sometimes called by health providers to come for services, they wished they had visited their households to check on how their children were doing, especially for those who lived close by. In spite of this, they still appreciated how the health providers used to call them once a while to remind
them to come for weekly ration of the RUTF and sometimes when they failed to visit the facility:

‘...Sometimes because of the distance we don’t come... For me, I think they could have visited us to check to see why we were not coming... In my small village, nurses come to our houses to check on us sometimes...’ (M9-FGD3).

Regular household visits and follow up means a lot to clients. They place much emphasis on it to reflect how they felt when they were visited or called which could translate into ensuring total care for the child.

4.2.2.3. Outcome

The outcome as a quality of care measure helps to show the benefits that patients/clients derive from accessing a particular health intervention, in this case, CMAM care.

4.2.2.3.1 Recovery

Since the mothers/caretakers could not discuss issues related to improved quality health status of their children owing to limited knowledge of the technicalities involved, they showed their opinion on one key fact (recovery) they perceived to be the criterion for measuring the outcomes of the care provided to their children. It came out through the discussions that the caregivers were pleased with the fast recovery of their children from SAM. What they attested to was that their very thin and small children quickly recover from their condition when put on treatment and start to gain weight. They grow beautifully into very smart and active children. A mother explained that:
‘...I am very gratified because now my daughter has gained weight...She now eats very well...People who used to know how thin and small she was now praise me for taking very good care of her because of her new look and weight gain...’ (M4- FGD2).

However, for many, maintaining the child’s weight gain after discharge would have been a problem had they not been opted into the daily feeding of family foods provided by some OPC sites:

‘... Many people wonder how my child recovered...Thanks to this service...’ (M3- FGD1).

From the above, it was deduced that some of the social benefits or recognition that mothers/caretakers derived from accessing the CMAM services were usually evident in the recovery of their malnourished children.

4.3. Chapter Summary

This chapter has presented the results and findings of the empirical study as analysed from both the quantitative and qualitative data. It has been shown that health care providers were doing their utmost best to deliver the care needed to the SAM children attending their sites. Their efforts were yielding both positive and negative results when measured on the basis of both their own assessment and that of the mothers/caregivers. The next chapter presents the discussion where the results and findings are related to relevant literature.
CHAPTER FIVE
DISCUSSION

5.0. Introduction

This chapter focuses on the discussion of findings of the study as related to theories and literature. The chapter is in three main sections. Section one presents discussion of the providers’ perspective of quality care. Here, the subthemes presented include: quality of case management in CMAM, the structural, process and outcome of CMAM care. Section two presents discussion of the clients/mothers/caregivers’ perspective of quality care. Here, the main subtheme is mothers’ perception of quality care of CMAM services. Section three presents the chapter summary.

5.1. Providers Perspective

This section presents the discussion of findings related to the providers’ perspectives of quality of CMAM services. The subthemes include: quality of case management in CMAM, the structural, process and outcome of CMAM care. That is, the findings are explained on the basis of the theoretical perspectives of quality of care developed by Donabedian (2005).

5.1.1. Quality of case management and documentation – Implications of the Process Model

The process model within the quality of care informs that health care providers should perform in line with acceptable standards (Donabedian, 2005). Nutrition interventions such as the CMAM, is required to meet the needs of affected population. This involves
the provision of quality care, which is assessed by standard nutrition indicators like recovery rates (Guerrero et al., 2010). This however, can be achieved through quality case management of SAM patients such as monitoring and documentation of a child’s weight, MUAC and oedema. Other responsibilities of the health provider in performing quality case management are the assessment and documentation of the various medical conditions and provision of treatment. This data gathering and documentation helps to improve the health of these malnourished children as well as providing routine data to service providers and other stakeholders about the trends of the health status of the children (Khresheh & Barclay, 2008).

The review of records revealed that outpatient case management and documentation of severe malnutrition was sub-optimal (refer to table 4.3). This requires the need for improvement of case management documentation in all facilities as proper documentation of case management was mostly done at admission than during treatment and subsequently, at discharge. When clinical documentations are incomplete, it makes it difficult to assess adequacy of the practice and to a large extent the outcome and quality of care. All these are critical to understanding the performance of the health system (Gathara et al., 2011). Zhang et al. (2013), confirmed that inadequate assessment of a sick child may lead to inappropriate treatment which may in the end affect the recovery of the child. This was evident in this study as recovery rate (62.0%) was below the minimal sphere standard (>75.0%). In contrast to studies in Ethiopia, case management records of tuberculosis patients were found to be fully documented
(Gebrekidan, Tesfaye, Hambisa, & Deyessa, 2014). The difference may be due to the geographical location and other factors.

5.1.2. Structural, Process and Outcome of CMAM care

The findings are explained in relation to the three constituents of the quality of care model: structure, process and outcome as discussed by Donabedian (2005).

5.1.2.1. Structure

The structure deals with resources in the health systems that are used for service delivery (Donabedian, 2005). The following themes were identified and discussed under the structure in this study: availability of trained staff, availability of routine drugs, equipment and supplies, availability of protocols/guidelines, and supervision.

5.1.2.1.1. Availability of trained staff

Key to quality service provision is the availability of trained staff. Trained staff, have the skills, experience, and knowledge to perform well. Quality of CMAM care like any health service provision demands the right quantity and quality of healthcare providers to produce quality outcomes. The study revealed that though only 50.0% of the staff had received training in CMAM outpatient care, the other 50.0% had to learn on the job. This means that an interim measure had been made available to ensure that SAM cases were appropriately managed leading to desired outcome. Upon interaction with staff, they expressed the need for refresher training since there had been updates and innovations in the care of severely malnourished children. This is in line with findings of Deconinck et
al. (2008) that continual training in CMAM helped to equip health providers to effectively manage SAM cases.

5.1.2.1.2. Availability of routine drugs, equipment and supplies

Unavailability of routine drugs, equipment and supplies affect the quality of health care delivery. Furthermore, it affects the morale of health care providers as they are unable to provide complete care (Mkoka et al., 2014). This study found that routine drugs, equipment and supplies were available in almost all the facilities assessed. They all seemed to be equipped with resources required for CMAM care as per the national recommendations. What was in shortage was the treatment cards though an improvisation had been done to salvage the situation. This contradicts earlier findings that factors that were affecting the quality of services in Uganda were shortage of drugs, inadequate trained health workers, poor attitude of the health workers, and long distances to health facilities (Kiguli et al., 2009).

5.1.2.1.3. Availability of Protocols/Guidelines

Findings from the study revealed that facilities had all the requisite protocols and guidelines and from observation, these guidelines and protocols were been used. This was evident also from the review of records, meaning that the protocols were not just available, but were also put to use. Health providers were very familiar with the contents of the protocols and guidelines, perhaps because they are easy to understand and could easily be used. This supports the findings on what influences the implementation of protocols and guidelines (Francke, Smit, de Veer, & Mistiaen, 2008). The study found
that health professionals tend to be familiar with contents of protocols/guidelines that are easy to understand.

5.1.2.1.4. Supervision

Similar to the Ghanaian situation where the Nutrition Units of health facilities are used to train student and newly qualified health professionals (GHS, 2015), Hossain and colleagues (2009), reported that the Nutrition Unit of Chittagong Medical College Hospital functioned as a training centre where health employees received practical training on management of severe malnutrition (p.72). Thus, supervision is critical to ensuring that the CMAM services successfully treat acute malnutrition in children. Inadequate supervision may lead to many problems occurring such as inappropriate rationing of RUTF, incorrect admission and discharge of beneficiaries and poor medical history taking/assessment and poor documentation (Chane et al., 2014). This may in turn affect rates of recovery of children as only few of them may recover and a number of them defaulting.

In spite of all the advantages of supervision, findings from this study showed that there was inadequate supervision. From observation and review of records, it was revealed that there was incomplete documentation, especially during subsequent visits and at discharge. This may have attributed to the low recovery rate (62.0%). This shows that if there had been regular supervision to the sites by senior health professionals, some of these inadequacies could have been identified and rectified. This finding contradicts the evidence associating supervision with quality patient care that supervision is most
effective when it is supportive since it allows for the provision of on-site technical support, joint problem solving and on-the-spot feedback on strengths and weaknesses to maximise the safety of patients (Hill et al., 2014).

Health providers’ demand for supportive supervision in this study points to the fact that regular supportive supervisory visits not only plays a key role in improving quality CMAM care, but also serves as a motivation to perform well in their field. Studies in Ghana (Frimpong, Helleringer, Awoonor-Williams, Yeji, & Phillips, 2011), Uganda (Hill et al., 2014), and Nigeria (Bello et al., 2013; Ayokunle & Odusoga, 2014), have shown that supervision improved health provider productivity and performance in ensuring quality care. A study in Bangladesh, demonstrated that well supervised and trained health providers were able to deliver CMAM care with high quality of care (Puett et al., 2013).

5.1.2.2. Process
According to the Donabedian (2005), model of quality of care, the process shows the actual work that health care providers carry out in their interaction and care for the patient. In this study, the process relates to the actual work carried out by health care providers for SAM clients under the CMAM services.

5.1.2.2.1. Provider Client Interaction
Health providers’ relationship with clients influences health care seeking and quality of care therefore; it remains the bedrock for quality care. The provider-client relationship is
crucial for mothers with malnourished children who are vulnerable as they have heightened dependence on the providers’ competence, skills, and morals (Goold & Lipkin, 1999). From the findings of this study, it could only be concluded that there was a healthy relationship between clients and providers. Interactions with mothers further revealed that they were respected and treated well by the health providers. This confirms the findings of a study in Tanzania, which reported a positive relationship between clients and providers (Boller, Wyss, Mtasiwa, & Tanner, 2003).

5.1.2.2.2. Adherence to protocols and guidelines

Adherence to CMAM protocols and guidelines is strongly recommended by WHO and national interim guideline on CMAM in the management of severe acute malnutrition (WHO, 2009; GHS, 2010). The guidelines provide useful, up-to-date evidence and best practices easy to follow in the management and treatment of SAM.

Direct observation during the study confirmed the adherence to protocols and guidelines. The records review also confirmed adherence to protocols and guidelines. However, the quantitative analysis revealed that these protocols and guidelines were not fully adhered to as results indicated that at subsequent visits and at discharge, some of the requirements were either partially performed or not performed at all (refer to table 4.3). Adhering to protocols and guidelines means offering standardised care to most patients in a bid to avoid harm and to improve outcomes. Non-adherence or partial adherence therefore, compromises on the standard care thereby leading to inappropriate care of SAM cases as observed by some researchers (Deconinck et al., 2008; Ebben et al., 2013).
5.1.2.2.3. Nutrition Information Provision

The study showed that all necessary information was given to mothers. Providing information that is consistent with the needs of the patient is a significant determinant for client satisfaction (Husson et al., 2011). It is very essential to quality care. Provision of nutrition information to clients with malnourished children prepares them for treatment, enhances adherence to rehabilitation, and promotes recovery. Without the provision of nutrition information, it is difficult for mothers of malnourished children to contribute to the process of treatment and compliance (Blencowe et al., 2015). Based on the information provided, mothers were able to properly feed their children with the RUTF, which helped in the recovery of their children.

5.1.2.2.4. Follow up mechanism

Follow-up mechanisms have been considered as central to primary care and have been associated with quality of care as these influence both the care processes and the outcome of care (Al-Azri, 2008). The study revealed that majority of the health providers were unable to undertake household visits because there were no available funds allotted for such services. It was also revealed that follow ups were not conducted because some of the clients were not residing within their catchment area, hence, the difficulty carrying out that activity. A study in Gambia, revealed that clients who had to travel very long distances to receive treatment often found themselves defaulting, hence, the need for follow up (Hill et al., 2005).
When follow up is done, it allows for interaction between health providers and clients on the child’s nutrition status, treatment progress and compliance and household visits. Studies have shown that follow ups have improved uptake of child health service and compliance with treatment and care (Al-Azri, 2008; Puett et al., 2013; Ruel & Alderman, 2013).

5.1.2.3. Outcome

The outcome is related to improvement of the health status of the patient, which is the primary objective of health care in Ghana (GHS, 2015). In the case of the CMAM services, this reflected in improved recovery rate of the SAM children and client satisfaction as discussed below.

5.1.2.3.1. Recovery Rate

The quality of the CMAM program is measured by the international sphere standards. The recovery rate (62.0%) in this study was not in the acceptable range of the sphere standard of <75.0%. This could be attributed to the lack of regular and supportive supervision, inadequate training for staff, partial adherence to the guideline for the management of SAM and inability to conduct follow ups. A similar finding has been documented (Chane et al., 2014). It is important for the health providers to consider the findings of a study in Bangladesh, which revealed that with good training and supervision as well as adherence to protocols and guidelines, health providers were able to achieve high recovery rates of 92.0% (Puett et al., 2013).
It is expected that malnourished children who access nutritional care and treatment early enough as well as comply with treatment have improved outcomes (recovery and satisfaction). The outcome however, will be determined by the process of care and the structural aspects of care (Bonaccorsi et al., 2015). The study also established that there was a significant difference ($p<0.041$) in terms of age and recovery. Children in the age range 12-59 months recovered earlier than those in the age range 6-11 months. This is similar to the findings of Saaka and colleagues (2015) who conducted similar studies in the northern region of Ghana and found that older children (12-59 months) recovered faster than those 6-11 months old.

5.1.2.3.2. Client Satisfaction

Kotler and Armstrong (2010), describe satisfaction as a one's feelings of pleasure or displeasure as per an outcome in relation to his or her expectations. Client satisfaction plays a pivotal role in the assessment of quality of care. Both service providers and policy makers place priority on client satisfaction because of its central role in determining quality care (Turkson, 2009). According to Donabedian (2005), “achieving and producing health and satisfaction as defined for individual members by a particular society or subculture is the ultimate validator of quality care” (pp.691-729). Peprah (2014) suggests that quality is a precursor for client satisfaction. In this study, clients expressed satisfaction with the services received. This is similar to studies in Ethiopia, where clients expressed satisfaction with services (Gebrekidan et al., 2014).
5.2. Clients/Mothers/Caregivers Perspective

This section presents discussion of findings related to the clients/mother/caregivers’ perspective. The main theme is mothers’ perception of quality care of CMAM services. The subthemes discussed include: competence of health providers, provision of information, provision of RUTF, interpersonal relationship, follow up, and outcome (recovery) of children.

5.2.1. Mothers’ Perception of Quality of CMAM Care Services

The perspective model of quality of health care as explained by Raven *et al.*, (2012), is that different stakeholders in the health care system perceive quality of care differently. Furthermore, Hulton, Matthews and Stones (2000), explain that though the quality of provision of care is essential, mothers’ experience with care is significant. Provision of care may be considered as being of high quality compared to acceptable standards of practice however, may be unacceptable to clients based on their experience with care. In this study, mothers of malnourished children were concerned with the care given them at the OPC sites and how this met their needs and expectations. A number of aspects of quality care were of particular interest to mothers. Among these aspects of quality care were competence of health providers, provision of information to their understanding, provision of RUTF, interpersonal relationship, follow up and outcome (recovery) of children.
5.2.2. Competence of health providers

The competence of health providers was important for mothers as they believed that had it not been for their competence, their children would not have recovered as expected. They were of the view that health workers were knowledgeable and possess skills for managing SAM children. This finding is similar to studies in Bangladesh and Ghana, where mothers were satisfied with how health providers were knowledgeable and skilful (Puett et al., 2013; Pomevor, 2013).

5.2.3. Provision of information

In relation to provision of information, mothers believed that the information given to them made them understand the illness of their children, the treatment and what was required of them to ensure their children recovered faster. Quite revealing in this study was how mothers’ myths about the condition had been demystified as a result of the information they received. Prior to attending the program, they believed that their child’s malnourished condition was spiritual and termed it in the local language as ‘Asram’. Kumbani et al. (2012), revealed that provision of information helped patients to make informed decisions about their health. This is also consistent with studies by Puett et al. (2013), who indicated that mothers were satisfied with information that were given them while they were on CMAM care.

5.2.3. Provision of RUTF

Mothers were particularly pleased with the provision of RUTF suggesting that they appreciated the treatment and acknowledged that RUTF was key in resolving their
children’s condition. This was because they saw how rapid their malnourished children recovered from SAM. This has been found to influence positively the perceptions of CMAM services by community members in earlier studies (Collins et al., 2006; Puett et al., 2013).

5.2.4. Interpersonal relationship

The findings show that clients generally valued the intense relationship they enjoyed from health providers while seeking care. This gives the impression that the process of care was client centered, which is in line with ethics of quality healthcare (Gebrekidan et al., 2014). Mothers expressed satisfaction based on respect, caring, empathy, friendliness of health providers as well as good personal relationship. Peprah (2014) found that patients who were satisfied with care expressed similar dimensions. Mothers explained that this created an enabling environment for them to put in their best in the care of their children, which resulted in their recovery. This perhaps explains why clients placed greater importance on health providers’ relationship in earlier studies (Chowdhury, Hossain, & Halim, 2009).

5.2.5. Follow up

Scheduled follow-up at regular intervals is necessary for ensuring the management of children with SAM (Hossain et al., 2009). Follow up provides a sustained mechanism in ensuring the importance of appropriate care and treatment of malnourished children to achieve successful outcome (Guerrero et al. 2010). Some mothers reflected how they felt when they were visited or called to check on the health of the child or to find out about
why they had not visited the facility as scheduled. Some mothers however, bemoaned that the household visits were not. This to them meant that they placed value on follow up. This endorses similar findings of a study in Bangladesh, where caretakers were happy about regular visits by community health workers who supported them until their children recovered (Puett et al., 2013).

5.2.6. Outcome (recovery) of children

One criterion for which mothers based their perception of quality on was how fast their children recovered from SAM after been put on treatment. They expressed that their very thin and small babies had improved health status after they received care from the facilities. This is similar to findings of Puett et al. (2013), who found that mothers were happy about how their children recovered from SAM. In relation to the conceptual framework adapted for the study, it is seen that mothers’ perceptions of quality of care was more related to the process in the Donabedian model which refer to the process influencing the outcome (Donabedian, 1992, 2005). The finding is also in line with the perspective model described in the literature. Perspectives of quality vary for stakeholders in health system. Mothers have different expectation to what quality health care is and all these expectations when met satisfied their perspective of quality of care (Bannerman et al., 2005).
5.3. Chapter Summary

This chapter presented a discussion of the findings of the study in relation to relevant literature. The next chapter presents the summary, conclusions and recommendations of the study.
CHAPTER SIX

SUMMARY, CONCLUSION AND RECOMMENDATIONS

6.0. Introduction

This chapter presents the summary, conclusions and recommendations of the study. The chapter is made up of six sections. Section one presents the summary of the study. Section two presents the conclusions based on the objectives of the study. Section three presents the recommendations based on the findings of the study. Section four presents contribution to knowledge in terms of policy and practice, methodology and theory. Section five presents limitations to the study. Section six presents future research.

6.1. Summary of the Study

The objective of the study was to assess the quality of CMAM services provided to severe acute malnourished (SAM) children without medical complications in the Accra Metropolitan Area. Specifically, the study assessed the structure, process and outcome of CMAM care. Clients’ (mothers of SAM children) perception of quality of CMAM services provided by the health professionals in the Accra Metropolitan Area, was also explored. Quantitative and qualitative research methods were employed in this study to provide different perspectives of quality of care. Outpatient sites of four CMAM designated facilities were purposively selected. Data were collected using different methods such as direct observation of processes in the delivery of CMAM services using a standardised checklist by the GHS, review of records and focus group discussions with clients whose children had benefitted from the CMAM services for their perspectives of
the services. The conclusions drawn from the study are outlined in accordance with the objectives.

6.2. Conclusions

The main conclusions of the study are presented on the basis of the objectives of the study.

6.2.1. Quality of case management

Health providers achieved good quality of care while managing cases of SAM without complications according to guidelines and protocols. They performed most of the case management (70.0%) tasks in accordance with the national guidelines. The study identified challenges with the completeness of the documentation of the case management practices. At admission, all required case management practices were duly done and documented unlike during follow on visits. Some of the inadequacies seen in key case management tasks were assessment and documentation of respiration rate, temperature and presence of bilateral pitting oedema during follow up visits even when resources (protocols and guidelines) were available.

6.2.2. Structure, Process and Outcome of CMAM

Considering the structure, process and outcome of quality of care indicators for CMAM care, the conclusion is that the quality of care was suboptimal although clients perceived the CMAM care to be of good quality.
Structure

In view of the structural elements in the quality of care model, the study revealed that adequate resources were available in all facilities to provide CMAM care except that there was little or no supervision. Effective supervision coupled with appropriate adherence to protocols and guidelines through the provision of continuous training, mentoring, monitoring and evaluation of CMAM care will play a vital role in increasing recovery rate (Chane et al., 2014).

Process

The study showed that adherence to protocols and guidelines by all health facilities was high. There was also positive provider-client interaction. All key information was provided to clients. Inability to conduct follow ups on clients through home visits as a result of no funding and incomplete documentation of care on treatment cards were the challenges identified. This is consistent with findings from a study done in Kenya where incomplete documentation was identified as one key challenge (Gathara et al., 2011).

Outcome

The study revealed low recovery rate as compared to the minimum sphere standard. The study indicates also that SAM children without complications were managed well by health providers based on perceptions of clients. Clients were found to be very satisfied with CMAM care hence, judging the services as being of good quality.
6.2.3. Clients (Mothers’) Perception of Quality of Care of CMAM Services

Clients (mothers) of SAM children who had benefitted from the CMAM services expressed satisfaction with the quality of services rendered to their children. Generally, the satisfaction was because their children recovered from their condition.

**Competence**

Clients were enthused by how health providers were informative and adept in relation to the care of their children. This conclusion is similar to studies in Bangladesh and Ghana, which confirm mothers’ satisfaction with how health providers were knowledgeable and skilful (Pomevor, 2013; Puett et al., 2013).

**Interpersonal relationship**

All clients encountered regarded health providers as friendly, respectful, empathetic and humane. They valued how they were being related to by the health professionals similar to studies done in Bangladesh (Puett et al., 2013) and Ethiopia (Gebrekidan et al., 2014).

**Provision of Information**

The study revealed health providers delivered key information to mothers taking note of their needs regarding care. Clients encountered expressed how useful the information provided them had helped in their children’s recovery. Studies done in Ethiopia and Bangladesh drew similar conclusions regarding the usefulness of information provided to clients seeking health care (Puett et al., 2013; Gebrekidan et al., 2014).
Follow up

Providers mostly told clients when to return for the next session. Whilst few of the mothers were satisfied with the follow up visits and calls by health care providers, majority were not. Those who expressed satisfaction were of the view that it felt so humbling having a service provider calling or visiting them. On the other hand, mothers who were not satisfied explained that they had neither being called or visited before. This contradicts conclusions found in Bangladesh regarding follow up by Puett and colleagues (2013).

Recovery

Ultimately, improvement in the condition (recovery) is all what mothers expect to have when they seek care. All mothers were of the view that the speedy recovery of their children was as a result of the good quality of CMAM services. In conclusion, mothers perceived the CMAM services to be of good quality owing to their experience with CMAM care similar to conclusions drawn in a study done in Ethiopia by Gebrekidan et al.,(2014).

6.3. Recommendations

This part draws on findings of the study and provides recommendations, which will contribute to the quality of CMAM care at outpatient care sites. Health policy makers and practitioners can take useful lessons from them.

1. Planned, continuing staff training, and regular supportive supervision should be provided to improve outcomes (recovery).
2. There is the need to provide documentation tools (treatment monitoring cards) for tracking and monitoring health status of malnourished children.

3. There is the need to institute formalised follow up on clients through home visits on regular basis with available support and funding to improve outcomes and overall quality of care.

4. Completeness in documentation is needed to ensure adequate information for health service delivery and research.

5. There should be an integrated approach in addressing severe acute malnutrition through multi-sectoral collaboration beyond the health sector. It should involve both the public and private sectors.

6.3.1. Contribution to Knowledge

This part presents the study’s contribution to knowledge on the basis of policy and practice, methodology and theory.

6.3.2. Implications for Policy and Practice

The study contributes to policy and practice. The CMAM service for SAM children is a policy instituted by the health sector to address issues of under-five malnutrition in the country (GHS, 2008). The implementation is on-going and assumed to be chalking some success. This study, been one of few studies conducted in the Greater Accra Region has helped to establish the proportion of SAM children appropriately managed in line with the treatment guidelines and protocols; quality of case management, health providers’
perceptions of quality of CMAM services; and clients’ perceptions of quality of CMAM services.

However, the study identified challenges with the health system such as weak supervision, inability to conduct follow ups on clients through home visits as a result of lack of funding, inadequate training of staff, incomplete documentation and shortage of documentation tools (treatment cards). This requires policy makers and service providers to invest in these to strengthen the health systems as they have implications for policy and practice. For instance, if health providers and policy makers are concerned about quality of care, then continuity between clients and their health providers should not be infrequent. This means that the health system should have a strong system in place to ensure that clients are able to be seen by their health providers whenever necessary to promote compliance with treatment and their well-being.

From the study, it was unclear whether the CMAM service was free as it was pointed out that clients who were not insured had to pay out of pocket before treatment. This contradicts the underlying assumption that the service is to be free. Other factors such as cost of transportation and payment for routine medications could hinder the service provision and hence, must be considered in the policy formulation and reformulation. Resource constrained areas such as the peri-urban area where the study was carried out require support because most mothers were unemployed and could not sustain the gains made after discharge. In the meantime, a circular should be made available stating clearly whether CMAM services are supposed to be provided freely to clients who are
non-insured with emphasis on the routine medication provision during treatment. A long term measure would be for donors and the government to support the nutrition services such as the CMAM through an increased budget allocation. Other countries in the developing world with similar malnutrition challenges could take a cue from Ghana’s experience – positive lessons should be learned while challenges should be rectified (Gathara et al., 2011).

6.3.3. Contribution to Methodology

The study makes a significant contribution to methodology. Different studies either used quantitative or qualitative methods separately or mixed methods to achieve their results (Pariyo et al., 2005; Puett et al., 2013; Yebyo et al., 2013; Chane et al., 2014; Saaka et al., 2015). This study applied mixed methods approach where both qualitative and quantitative methods were used to gather primary data for analysis. Direct observations helped the researcher to witness service delivery process in order to gain an extensive understanding of the issues required to be addressed to improve the quality of CMAM care. By using focus group discussions, observation checklist, and review of records, triangulation of methods was made possible - giving a true picture of the findings. This way, the evidence from this study will show that contradictory findings may not be valid.

6.3.4. Contribution to Theory

This study contributes to the understanding of the comprehensive view of quality CMAM care on the basis of Donabedian’s theoretical framework of quality of care and the perspective model. The perspective model explains how the perspective of quality differs
for different stakeholders in the health system. Clients perceived quality of service based on their experience with care they received and how their expectations were met (Mosadeghrad, 2012). This has implications for health providers as it will be important for them to monitor these perspectives of quality to sustain the high levels of client satisfaction. The application of the model, first of its kind to assessing the quality of CMAM care in Accra Metropolitan Area, has contributed to the understanding of quality healthcare.

6.4 Limitations of the Study

The study was conducted at outpatient care sites purposively selected in only one district. The study also examined only one sphere outcome, that is, the recovery. Although it might not be possible to generalise the findings to all districts in the Greater Accra Region and other regions implementing CMAM services, the study provides important information required for the implementation of community based interventions such as CMAM services. Furthermore, the qualitative findings of the study only represent views of mothers and caregivers who had benefitted from the services prior to the time of the study. Some bias may have been introduced into the qualitative data collection process as a result of the presence of the researcher during the focus group discussion. However, the discussions were well directed in such a way as to bring out honest responses and opinions from all caretakers, which were deliberated. Lastly, the presence of the researcher may have affected the quality of care offered by the health providers. A similar observation has been noted (Rowe et al., 2006).
6.5. Further research

Further qualitative studies should be conducted to generate more information on the perspective of quality of care of both health providers and care givers in the whole country. Other outcomes of the sphere standards should be looked at as they are important indicators, which are useful in understanding the quality of the CMAM care. For future research and policy implication, it will be appropriate that similar study is done both in an urban and rural setting using the mixed method approach to assess various perspectives of quality CMAM services in addressing SAM in children.
REFERENCES


APPENDICES

Appendix A: Participant Informed Consent Form

School of Public Health
College of Health Sciences
University of Ghana

Title of Research: Assessment of Quality Care of Community-Based Management of Acute Malnutrition Services in Accra Metropolitan Area

Introduction
As part of the requirement for the award of master of public health degree from the University of Ghana, School of Public Health, we are carrying out a study on assessment of quality care of community-based management of acute malnutrition services in Accra Metropolitan Area.

We are happy inviting you to take part in the above study. Before you participate in this study we would like you to read or have it read to you the information on what this research is about so you can consent to be part the study.

Purpose of the study
As part of efforts to reduce child mortality, one of the effective interventions put in place is to address severe acute malnutrition among children under 5 years of age. CMAM, a recommended approach adopted by the Ghana Health Service on the management of acute malnutrition to help improve screening, identification, referral, and treatment of acutely malnourished children within the community-based health service delivery system. The purpose of our research is to assess the quality of CMAM services and to know your views and perceptions about the services in relation to treatment of the children with malnutrition in this community.

Potential risk/benefit
Your participation would not have any risks or disadvantages and benefits. However your participation will be highly appreciated. You may withdraw without giving reason. You are also free to ask questions during the interviews. My contact details will be made available for easy access. Information gathered will help improve CMAM services.
Privacy/Confidentiality

Information provided will be kept confidential and your responses will be made anonymous before analysis. Under no circumstances would your name be mentioned in the study as this would only be identified by codes.

Data storage and usage
The data collected will be stored in locked cabinet. Access to the data will be limited to the research team.

Voluntary withdrawal
Participation in this study is entirely voluntary. Withdrawal from the study at any point in time, or declining to answer a question will have no negative consequence.

Compensation
There will be no compensation for participating in this study.

Contact for Additional Information
Please contact the Principal Investigator: Rhodalyn Adda
Address: Box LG 13, Department of Health Policy Planning and Management, School of Public Health, College of Health Sciences University of Ghana, Legon.
Tel: 0244219992 E-mail: rhodalyn.adda@yahoo.com

In case of any concern you can contact the Ethics Administrator, Miss Hannah Frimpong, GHS/ERC on: 0243235225 / 0507041223.

Participant’s Consent Form
I confirm that I have read or it has been read to me or translated to me the information on what this research is about and what it aims to achieve and I fully understand the purpose of the research. I have had the opportunity to ask questions about it and that any question I have asked has been satisfactorily answered.

I also understand that my participation is voluntary and will not have any immediate and direct benefits and that I am free to withdraw at any time without giving any reason. I am aware that my responses will remain anonymous.

I therefore agree to take part in the study and have it tape recorded if the need be.

…………………………... …………………………….. ……………………………..
Name of Participant/Witness Date Signature/Thumbprint
I, the undersigned (your name) certify that the nature and purpose, the risks and benefits associated with participating in this research have been explained to the participant before participation in the study.

................................................. ................................. .................................
Name of Person taking consent         Date         Signature
Appendix B: Data Collection Tools

School of Public Health
College of Health Sciences
University of Ghana

Assessment of Quality Care of Community-Based Management of Acute Malnutrition Services in Accra Metropolitan Area

CMAM OPC QUALITY CHECKLIST / FACILITY LEVEL CHECKLIST

I am a MPH student from the School of Public Health, College of Health Sciences, and University of Ghana. I am conducting a research on the quality of CMAM services. This is in partial fulfillment of the requirements for the award of MPH degree and would like you to be part of my research subjects. The research is purely for academic purposes and your opinion would be treated as confidential as much as possible. You have the right to withdraw from this process at any stage you wish, but it would be appreciated if you fully complete it. The interview will take about 15-20 minutes of your time. Thank you.

Health Facility Name: ..........................................................
District: ............................................................................
Region: ............................................................................
Date of Assessment: ..........................................................

PART A: STRUCTURE

<table>
<thead>
<tr>
<th>Availability of trained staff</th>
<th>Staffing and Training</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speak with the in-charge on the day of the visit, and observe the number of staff present</td>
<td></td>
</tr>
<tr>
<td>Health staff</td>
<td>Total assigned to this facility</td>
</tr>
<tr>
<td>-----------------</td>
<td>---------------------------------</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Availability of Protocols/Guidelines</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1 Are there latest guidelines accessible for reference?</td>
<td>Yes---------1</td>
</tr>
<tr>
<td>No---------2</td>
<td></td>
</tr>
<tr>
<td>2.2 Are job aids displayed and used?</td>
<td>Yes---------1</td>
</tr>
<tr>
<td>No---------2</td>
<td></td>
</tr>
<tr>
<td>2.3 SAM Action Protocol</td>
<td>Yes---------1</td>
</tr>
<tr>
<td>No---------2</td>
<td></td>
</tr>
<tr>
<td>2.4 RUTF look up table and key messages</td>
<td>Yes---------1</td>
</tr>
<tr>
<td>Table 2.5</td>
<td>Yes--1</td>
</tr>
<tr>
<td>------------</td>
<td>--------</td>
</tr>
<tr>
<td>2.5 SAM classification Algorithm</td>
<td>Yes--1</td>
</tr>
<tr>
<td>2.6 MUAC classification table</td>
<td>Yes--1</td>
</tr>
<tr>
<td>Availability of Routine Drugs and Supplies</td>
<td>Yes--1</td>
</tr>
<tr>
<td>3.2 RUTF</td>
<td>Yes--1</td>
</tr>
<tr>
<td>3.3 MUAC TAPES</td>
<td>Yes--1</td>
</tr>
<tr>
<td>3.4 WEIGHING SCALES</td>
<td>Yes--1</td>
</tr>
<tr>
<td>ROUTINE MEDICATIONS</td>
<td>Yes--1</td>
</tr>
<tr>
<td>3.3 Amoxicillin</td>
<td>Yes--1</td>
</tr>
<tr>
<td>3.4 Cotrimoxazole</td>
<td>Yes--1</td>
</tr>
<tr>
<td>3.5 Artesunate and Amodiaquine</td>
<td>Yes--1</td>
</tr>
<tr>
<td>3.6 Albendazole</td>
<td>Yes--1</td>
</tr>
<tr>
<td>3.7 Malaria rapid test kits (para-check)</td>
<td>Yes--1</td>
</tr>
<tr>
<td>Supervision</td>
<td>Yes--1</td>
</tr>
<tr>
<td>4.1 Monthly Supervision to staff</td>
<td>Yes--1</td>
</tr>
<tr>
<td>4.2 Quarterly Supervision to staff</td>
<td>Yes--1</td>
</tr>
<tr>
<td>PART B: PROCESS</td>
<td>Yes--1</td>
</tr>
<tr>
<td>Adherence to Guidelines and Protocols</td>
<td>Yes--1</td>
</tr>
<tr>
<td>General patient flow</td>
<td>Yes--1</td>
</tr>
<tr>
<td><em>Observe OPC activities at the start of the session</em></td>
<td>Yes--1</td>
</tr>
<tr>
<td>5.1 Is triage done at the beginning of the session?</td>
<td>Yes--1</td>
</tr>
<tr>
<td>5.2 If cases are above 10, is group nutrition and health education given? If less than 10 cases, individual counselling should be emphasized</td>
<td>Yes--1</td>
</tr>
<tr>
<td>5.3 Is there a clear flow of activities? (separate stations set up)</td>
<td>Yes--1</td>
</tr>
<tr>
<td>Question</td>
<td>Yes</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>-----</td>
</tr>
<tr>
<td>5.4 How long, on average, were caregivers waiting for services?</td>
<td></td>
</tr>
<tr>
<td>5.5 Anthropometry and assessment of bilateral oedema</td>
<td></td>
</tr>
<tr>
<td>Observe at least three (3) children being assessed. Assess measuring technique, and re-measure child, if necessary, to verify accuracy.</td>
<td></td>
</tr>
<tr>
<td>5.6 MUAC</td>
<td></td>
</tr>
<tr>
<td>5.7 Weight</td>
<td></td>
</tr>
<tr>
<td>5.8 Oedema</td>
<td></td>
</tr>
<tr>
<td>Medical history</td>
<td></td>
</tr>
<tr>
<td>Observe at least three (3) children being assessed. Note the number of children you observe having a medical history taken, and how many of those were asked about key warning signs.</td>
<td></td>
</tr>
<tr>
<td>5.9 Caregiver asked about fever</td>
<td></td>
</tr>
<tr>
<td>5.10 Caregiver asked about diarrhea</td>
<td></td>
</tr>
<tr>
<td>5.11 Caregiver asked about vomiting</td>
<td></td>
</tr>
<tr>
<td>5.12 Caregiver asked about appetite</td>
<td></td>
</tr>
<tr>
<td>Physical examination and appetite test</td>
<td></td>
</tr>
<tr>
<td>Observe at least three (3) children receiving physical exam and appetite test. Assess technique, if possible.</td>
<td></td>
</tr>
<tr>
<td>Physical examination conducted</td>
<td></td>
</tr>
<tr>
<td>Temperature taken</td>
<td></td>
</tr>
<tr>
<td>Respiratory rate checked</td>
<td></td>
</tr>
<tr>
<td>Health staff checks for chest in-drawing</td>
<td></td>
</tr>
<tr>
<td>Checked for dehydration (skin elasticity, sunken eyes)</td>
<td></td>
</tr>
<tr>
<td>Checked for anemia (palmar pallor)</td>
<td></td>
</tr>
<tr>
<td>Appetite test conducted</td>
<td></td>
</tr>
</tbody>
</table>
### Routine drugs

*Observe the distribution of routine drugs for new admissions and returning children.*

*Note if the following drugs were given according to protocols:*

<table>
<thead>
<tr>
<th>Drug Description</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amoxicillin (7-day course, started on admission) and Co-trimoxazole for HIV positive children</td>
<td>Yes--</td>
<td>No--</td>
</tr>
<tr>
<td>Was malaria test done and anti-malarial provided if positive</td>
<td>Yes--</td>
<td>No--</td>
</tr>
<tr>
<td>Albendazole (single dose on 2(^{nd}) visit). Albendazole should only be provided to children &gt;2 years of age.</td>
<td>Yes--</td>
<td>No--</td>
</tr>
</tbody>
</table>

### Provider –client interaction

**During assessment, registration or distribution of RUTF, observe health workers’ interaction with caregiver.**

<table>
<thead>
<tr>
<th>Item</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.1 Did health staff counsel caregiver on child’s condition?</td>
<td>Yes--</td>
<td>No--</td>
</tr>
<tr>
<td>6.2 Did health staff advise caregiver to go to nearest health facility if child’s condition worsens?</td>
<td>Yes--</td>
<td>No--</td>
</tr>
<tr>
<td>6.3 Health staff treated clients in a friendly manner</td>
<td>Yes--</td>
<td>No--</td>
</tr>
</tbody>
</table>

### Provision of Nutrition Information

<table>
<thead>
<tr>
<th>Item</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.1 Did health staff give correct RUTF messages to caregivers?</td>
<td>Yes--</td>
<td>No--</td>
</tr>
<tr>
<td>7.2 Did health staff provide counselling on feeding of variety of foods?</td>
<td>Yes--</td>
<td>No--</td>
</tr>
<tr>
<td>7.3 Did health staff provide information on hygienic practices</td>
<td>Yes--</td>
<td>No--</td>
</tr>
</tbody>
</table>

### Follow up Mechanism

<table>
<thead>
<tr>
<th>Item</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.1 Did health staff tell the caregiver when to return for the next visit?</td>
<td>Yes--</td>
<td>No--</td>
</tr>
<tr>
<td>8.2 Dis health worker discuss priorities for follow-up home visits or calls</td>
<td>Yes--</td>
<td>No--</td>
</tr>
</tbody>
</table>

What challenges do you face as service providers in delivering the CMAM program?

In your opinion what can be done to improve the CMAM program?
Appendix C: Data Collection Tools

School of Public Health
College of Health Sciences
University of Ghana

Assessment of Quality Care of Community-Based Management of Acute Malnutrition Services in Accra Metropolitan Area

FOCUS GROUP DISCUSSION (FGD) GUIDE

INTRODUCTION

You have been selected to participate in this study “Assessment of the Quality Care of Community-Based Management of Acute Malnutrition Services in Accra Metropolitan Area. The purpose of this study is to assess the quality of care of CMAM services provided to severe acute malnourished children. The study findings are intended to inform community based programs so as to improve service delivery. You will be asked about your experiences, perceptions and expectations about the CMAM service received.

With the above information, if you have any question about the study, you are free to ask. Questions can be asked if you need any clarification. You may voluntary withdraw from the study at any time if you wish. The discussion will last for about 15-30 minutes and will be kept completely confidential. Each of you will be registered on a sheet. Please note that your participation or refusal to participate in this discussion will not affect the services you receive in any way. Your responses will help understand how to improve our services by focussing on areas of strength and those that require improvement. A token will be offered to all members to compensate for your time spent.

GENERAL BACKGROUND: (establishing rapport)

1. Before we start, I would like each and every one to tell me about you. (Socio-demographic characteristics: age, education, marital status and occupation)
2. If working, what work do you do?
3. What is your marital status (married or single)?
SECTION A: Clients’ (mothers’) perception of the quality of CMAM services

Nutrition service provision

1. How did you become aware about program?

2. How did you child get enrolled?

3. What services were provided to you? Assessment (weighing, MUAC, physical examination e.g. checking temp, breathing, treatment of other conditions, provision of RUTF etc.)

Provision of information

1. What information did you receive from health workers regarding malnutrition and the CMAM program?

2. Did you understand the information given you?

3. Did the information provided address all your questions to your satisfaction?

4. If not, were you allowed to express yourself?

5. How useful was this information to you?

Provider- Client Relationship

1. What was the health workers relationship towards you?

2. Were they health workers friendly, respectful and dependable?

3. Did they ensure privacy and confidentiality?

4. Were they judgmental at towards the condition of your children?

5. Were you made to feel embarrassed at the condition of your children?

Follow up mechanism

1. Was there any follow up visit by the staff?

2. Were you prompted or reminded when to make the next visit

3. Were you told to visit the nearest facility should the condition worsen?
Outcome

1. How did your child respond to treatment?

2. What are your views/perceptions about the program?

3. Were you satisfied with the service?

4. How do you hope to be improved

5. Any comment, questions

Thank you for participating in this discussion
Appendix D: Ethical Approval

The Ghana Health Service Ethics Review Committee has reviewed and given approval for the implementation of your Study Protocol titled:

“Assessment of Quality Care of Community-Based Management of Acute Malnutrition Services in Accra Metropolitan Area”

This approval requires that you submit yearly review of the protocol to the Committee and a final full review to the Ethics Review Committee (ERC) on completion of the study. The ERC may observe or cause to be observed procedures and records of the study during and after implementation.

Please note that any modification without ERC approval is rendered invalid.

You are also required to report all serious adverse events related to this study to the ERC within three days verbally and seven days in writing.

You are requested to submit a final report on the study to assure the ERC that the project was implemented as per approved protocol. You are also to inform the ERC and your sponsor before any publication of the research findings.

Please note that this approval is given for a period of 12 months, beginning 11th March, 2016 to 10th March, 2017. However, you are required to request for renewal of your study if it lasts for more than 12 months.

Please always quote the protocol identification number in all future correspondence in relation to this approved protocol.

Signed: [Name]
Professor Moses Aikins
(GHS-ERC VICE-CHAIRPERSON)

Cc: The Director, Research & Development Division, Ghana Health Service, Accra.
The Director
Accra Metropolitan Health Directorate
Ghana Health Service
Accra.

Dear Sir/ Madam,

LETTER OF INTRODUCTION

I wish to introduce to you Adda Rhodalyn, Master of Public Health (MPH) student of the Department of Health Policy, Planning and Management, School of Public Health, University of Ghana, Legon. As part of the requirement for the award of MPH degree, she is expected to undertake a piece of research to enable her write her dissertation.

Her research topic is “Assessment of quality care of community-based management of acute malnutrition service in the Accra Metropolitan Area”.

I shall be grateful if your outfit could assist her with any needed information for her dissertation. She has obtained ethical clearance from Ghana Health Service Ethical Review Committee for this work.

Thank you for your cooperation.

Yours sincerely,

[Signature]

Dr. Reuben Esena
Head of Dept.

INTEGRIS PROCEDAMUS

COLLEGE OF HEALTH SCIENCES

* Telephone: +233 (0) 289 109 006
* Email: hppm@ug.edu.gh
* Website: www.publichealth.ug.edu.gh
GHANA HEALTH SERVICE  
REGIONAL HEALTH DIRECTORATE  
GREATER ACCRA  
P. O. BOX 184  
ACCRA

Tel: +233-0302-234225/226203  
E-mail: lavanotoo@yahoo.com  
linda.vanotoo@ghmail.org

19th May 2016

THE MEDICAL SUPERINTENDENT  
- PML HOSPITAL, ACCRA  
- MAAMOBI GENERAL HOSPITAL, MAAMOBI

THE IN-CHARGE  
- USSHER POLYCLINIC  
- MAMPROBI POLYCLINIC

RE: LETTER OF INTRODUCTION

This serves to introduce to you Ms. Adda Rhodalyn, a Master of Public Health (MPH) student of the Department of Health Policy, Planning and Management, School of Public Health, University of Ghana.

She has approval from the Regional Health Directorate to conduct a research on the topic: 
“Assessment of Quality Care of Community-Based Management of Acute Malnutrition Service in the Accra Metropolitan Area” in your facility as per the attached.

Kindly offer her the needed assistance and support to enhance a fruitful exercise.

Thank you.

DR. LINDA A. VANOTOO  
REGIONAL DIRECTOR OF HEALTH SERVICES  
GREATER ACCRA

cc: Ms. Adda Rhodalyn  
Department of Health Policy, Planning and Management  
School of Public Health  
University of Ghana, Legon
RE: LETTER OF INTRODUCTION
MS RODALYN ADDA

Please find the attached introductory letter from the Regional Health Directorate in respect of the above named for consideration.

Kindly accord her the necessary assistance.

Thank you.

DR GEORGE MNSAH
ACCRA METRO DIRECTOR OF HEALTH SERVICES