

# **UNIVERSITY OF THE WESTERN CAPE**

**Faculty of Community and Health Sciences**

**School of Public Health**

## **UPTAKE OF HIV TESTING AMONG ACUTELY MALNOURISHED CHILDREN IN DOWA DISTRICT OF MALAWI**



**A mini-thesis submitted in partial fulfillment of requirements of degree of Masters in  
Public Health at School of Public Health, University of the Western Cape**

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**Key words:**

Uptake of HIV testing;

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Supplementary feeding program

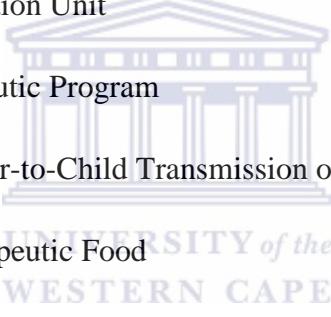
HIV infection

Service-related factors

Malawi



## **Abbreviations**

CHAM	Christian Health Association of Malawi
CMAM	Community-based Management of Acute Malnutrition
DHO	District Health Office (Officer)
HSA	Health Surveillance Assistant
HTC	HIV Testing and Counseling
MAM	Moderate acute malnutrition
MUAC	Mid-upper arm circumference
NRU	Nutrition Rehabilitation Unit
OTP	Out-patient Therapeutic Program
PMTCT	Prevention of Mother-to-Child Transmission of HIV
RUTF	Ready-to-Use Therapeutic Food  The logo of the University of the Western Cape, featuring a classical building facade with four columns and the text "UNIVERSITY of the WESTERN CAPE" below it.
SAM	Severe Acute Malnutrition
SFP	Supplementary Feeding Programme
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNICEF	United Nations Children's Fund
WHO	World Health Organization

## **Definition of Terms**

### **Acute malnutrition**

Acute malnutrition is defined as the depletion of body mass which results from the body consuming its reserve nutrients as a consequence of inadequate nutrient intake (Mora, 1999).

### **Severe acute malnutrition**

Severe acute malnutrition (SAM) in 6–60 month old infants and children is defined as a weight-for-height measure of below -3 standard deviations (SD) of the 2006 WHO growth standards. Other indicators of SAM are a mid-upper arm circumference (MUAC) of less than 115 mm; and bilateral oedema (WHO & UNICEF, 2009).

### **Moderate acute malnutrition**

Moderate acute malnutrition (MAM) in children is defined as weight-for-height between -3 and -2 z-scores of the median of the WHO child growth standards without oedema (WHO, 2013).

### **Provider-initiated HIV testing and counseling**

Provider-initiated HIV testing and counseling is where a health care provider specifically recommends testing; pre-test information is given to the client; and ordinarily a testing is carried out unless the client declines (WHO, 2012).

### **Voluntary Counseling and Testing (VCT)**

According to WHO (2012) Voluntary Counseling and Testing is where a client, out of their own free will, actively seeks an HIV test.

## **Declaration**

I, Lusungu Chitete, declare that this study is a true reflection of my own work; and that this study or part thereof has not been submitted for a degree or examination at any other institution of higher learning.

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Signed:

Lusungu Chitete

Date: 28 May 2013



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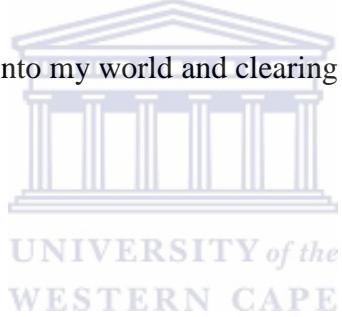
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## **Dedication**

I dedicate this study to my son, Tukusubila

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## **ABSTRACT**

**Background:** Acute malnutrition and HIV are immense public health problems. Globally 27% of under-five children are stunted, 16 percent are underweight and 10 percent are wasted UNICEF (2012); and as of 2009 there were over 33 million people living with HIV worldwide UNAIDS (2010). In Malawi nearly half (47%) of children are stunted; 13 percent are underweight and 4 percent are wasted (National Statistical Office, 2010); and an estimated 11 percent of people aged between 15 and 49 years are infected with HIV (National Statistical Office, 2010).

The community-based management of acute malnutrition (CMAM) is the national program for treating acute malnutrition in Malawi. Under this program children being treated for malnutrition are required to undergo an HIV test, so that those infected can receive appropriate care. However, national-level CMAM data shows low uptake of testing of children. Prior studies have investigated client-related factors affecting uptake of HIV testing in CMAM. However, service-related factors affecting up-take of testing had not been investigated.

**Aim:** This study sought to investigate service-related factors that affect uptake of HIV testing among children enrolled in CMAM.

**Methodology:** This was a descriptive study that used mixed quantitative and qualitative methods. To assess uptake of HIV testing records were reviewed of number of children tested as a percentage of number of children enrolled in CMAM over 12-month period in a sample of health facilities. Face to face in-depth interviews were conducted of CMAM and HTC focal persons to investigate factors affecting uptake. Information from interviews was analyzed using a thematic approach.

**Results:** Quantitative data revealed that 58% of children enrolled in CMAM were tested of HIV. From qualitative data emerged four themes related to factors that negatively affected uptake of HIV testing, i.e. (a) lack of resources for HIV testing, (b) shortage of staff skilled in HIV testing and counseling, (c) lack of commitment among staff in referring children for HIV testing; and (d) inadequately trained staff.

**Conclusion:** Uptake of HIV testing in children enrolled in CMAM is moderately low compared to the program requirement that all children be tested. This is attributed lack of resources for HIV testing, shortage of staff skilled in HIV testing and counseling, lack of commitment among staff in referring children for HIV testing; and inadequately trained staff.

It is recommended that supply of test kits be increased and sustained; more HIV testing counselors be deployed; training be provided to CMAM staff; and couple counseling and testing be promoted.



## **Chapter 1: INTRODUCTION**

### **1.1 Global overview of Malnutrition and HIV**

Acute malnutrition is defined as the depletion of body mass which results from the body consuming its reserve nutrients as a consequence of inadequate nutrient intake (Mora, 1999). Acute malnutrition and HIV are immense global public health problems.

As of 2009, there were over 33 million people living with HIV globally. However, the HIV epidemic is unevenly spread around the world, with sub-Saharan Africa carrying over 60% of the global disease burden (UNAIDS, 2010).

According to UNICEF (2012), globally 27% of under-five children are stunted, 16 percent are underweight and 10 percent are wasted. As with many other health indicators, sub-Saharan Africa faces comparatively high levels of malnutrition in children, especially in terms of stunting and underweight which stand at 39% and 20% respectively. UNICEF (2012) further reports that the differences in growth of children under five between regions of the world can be attributed mainly to differences in feeding practices, environment and health care.

### **1.2 Overview of Malnutrition and HIV in Malawi**

In Malawi nearly half (47%) of children are stunted; 13 percent are underweight and 4 percent are wasted (National Statistical Office, 2010). The country has an estimated HIV prevalence of 11 percent in the 15-49 year age group (National Statistical Office, 2010), with close to a million people living with HIV (UNAIDS, 2010).

### **1.3 Effect of HIV on nutrition status**

HIV infection greatly compromises nutrition status, in both adults and children, manifesting mainly through wasting. This is through the association between HIV infection and reduced food intake, mal-absorption of nutrients, altered metabolism and secondary infections amongst people living with HIV (Gramlich & Mascioli, 1995).

To achieve normal growth asymptomatic and symptomatic HIV infected children need 10% and 50 to 100% more energy intake respectively over normal requirements (WHO, 2003 cited in Hendricks, Eley & Bourne, 2007).

In HIV-exposed babies, HIV infection affects growth and nutrition status starting in the peri-natal stages, frequently resulting in low birth weight (Hira *et al.*, 1989; Bulterys *et al.*, 1994, as cited by Hendricks *et al.*, 2007). After birth, the effects of HIV infection manifest themselves in stunting, underweight and wasting, or even death of children, unless remedial interventions like anti-retroviral therapy (ART) are administered (Carey *et al.*, 1998; Bobat *et al.*, 2001; McKinney & Robertson, 1993, as cited by Hendricks *et al.*, 2007).

#### **1.4 Global strategies for treatment of acute malnutrition**

Community-based management of acute malnutrition (CMAM) has been widely adopted in Sub-Saharan Africa and beyond as the model for treatment of acute malnutrition. CMAM has most remarkably changed modality for treatment of severely acutely malnourished children in that not all such children need be treated as in-patients as was the case previously. Instead, ready-to-use therapeutic food (RUTF) is prescribed to children with SAM to be consumed at home. In-patient treatment of all children with SAM was found to not only overwhelm already under-staffed nutrition rehabilitation facilities, but also to be costly to clients (Collins, Dent, Binns, Bahwere, Sadler & Hallam, 2000).

#### **1.5 Strategies for treatment of acute malnutrition in Malawi**

In Malawi CMAM is the national program for addressing severe and moderate acute malnutrition (Ministry of Health, undated). CMAM has three treatment components:

- Nutrition Rehabilitation Units (NRU) where severely malnourished children with medical complications and poor appetite are treated as in-patients;
- Outpatient Therapeutic Program (OTP) where severely malnourished children without complications and with good appetite are treated as out-patients; and
- Supplementary Feeding Program (SFP) where children with moderate acute malnutrition are treated as out-patients.

In the CMAM program, malnourished children are identified through a continuum of care comprising communities, out-reach clinics, health centres and hospitals. At any point in this continuum, children are assessed through measurement of weight-for-height, mid-upper arm

circumference and oedema. Those diagnosed malnourished are then referred to SFP, OTP or NRU depending on severity of their condition, as per preset criteria (Appendix 8).

In the communities, anthropometric assessments are conducted by volunteers and in the rest of the continuum assessments are typically carried out by health surveillance assistants (HSA). Children who are admitted into NRUs are upon being discharged referred to OTP, after which they complete the treatment in SFP; likewise those who enter the program at OTP are further referred to SFP. Moderately malnourished children start treatment in SFP. The main treatment products used in NRUs are two types of therapeutic milk, which are: F75, a starter formula composed of 35 g full-cream dried milk, 100 g sugar, 20 g oil, 20 ml electrolyte/ mineral solution, and make up to 1000 ml; and F100, a catch-up formula composed of 110 g full-cream dried milk, 50 g sugar, 30 g oil, 20 ml electrolyte/ mineral solution, and make up to 1000 ml (Ashworth, Khanum, Jackson, Schofield (2003)). In OTP treatment is done with ready-to-use therapeutic food (RUTF); and in SFP with corn-soya blend and vegetable oil. While in NRU children are hospitalized, in OTP and SFP therapeutic products are collected periodically and consumed at home.

At entry into CMAM children must, according to guidelines (Ministry of Health, undated), be referred to HTC. This is in addition to children being seen by clinicians who then prescribe other medical treatment depending on conditions diagnosed.

Currently, of all the 607 government health facilities in Malawi, 100 have an NRU, 483 offer OTP services and 350 offer supplementary feeding.

At national level the CMAM program is coordinated by the Nutrition Unit in the Ministry of Health. Nutrition focal persons oversee these services at both district and facility levels. Program guidance flows from the ministry headquarters to districts then to facilities, while reporting, which is typically in the form of monthly reports, passes through the same levels but in the reverse direction. Data from monthly reports are entered into a central database of CMAM.

## **1.6 Strategies for HIV testing and counseling in Malawi**

HIV Testing and Counseling (HTC) for children in Malawi follows Guidelines for Paediatric HIV Testing and Counseling (Ministry of Health, 2007). HTC is typically carried out in health facilities the majority of which are government-run, although testing is also conducted in private, religious-based and NGO-run facilities. Of the 607 government health facilities nationwide, 567 offer HTC services.

Typically HTC is conducted by certified counselors. Clients of HTC are either referred from other services (such as CMM) in the same or other facility or are those that self-report for testing. In the case of CMAM clients, HIV testing is ‘provider-initiated’. Provider-initiated HIV testing and counseling is where a health care provider specifically recommends testing; pre-test information is given to the client; and ordinarily a testing is carried out unless the client declines. This is unlike voluntary counseling and testing (VCT) which is where a client actively seeks a test (WHO, 2012; WHO/UNAIDS, 2007).

HIV testing and counseling is typically offered in the same premises as CMAM, although generally not in the same room.

Test kits are provided to government facilities directly from stores at national headquarters, although they are at times delivered to district headquarters for secondary delivery to facilities. Test kits are also at other times donated directly to facilities by donor and other agencies.

Nationally, HTC is managed by the Department of HIV/AIDS in the Ministry of Health and overseen by HTC focal persons at district and facility levels.

Program guidance flows from the ministry headquarters to districts then to facilities, while reporting, which is typically in the form of monthly reports, passes through the same levels but in the reverse direction. Data from monthly reports is stored in a central database.

## **1.7 Problem Statement**

National CMAM data shows that only a fraction of children are tested for HIV. For example, of the 64,677 children newly admitted in CMAM in 2012, only 16,672 were reported to have undergone HIV testing representing uptake of 26%. Prior studies that have investigated factors

which affect uptake of HTC amongst CMAM clients have focused on patient-related factors in the form of clients' willingness to undergo testing, which was found to be high (Thurstans, Kerac, Maleta, Banda and Nesbitt (2008); Bahwere *et al.*, 2008). This is in contrast to current data which shows that only 26% are tested. Also, these prior studies have been limited to NRU and OTP at the exclusion of SFP which, in terms of numbers of clients, is the largest component of CMAM. No prior study assessed service-related factors and across all components of CMAM. Facility-level factors are as important in uptake of HIV testing as client factors (Anand *et al.*, 2009).

Against this background the study investigated service-related factors affecting uptake of HIV testing among acutely malnourished children enrolled in CMAM program. In this study service-related factors include: resources for HIV testing; availability of staff; staff know-how; and attitude of staff.

## **1.8 Stakeholder consultation**

Verbal conversations and email communication were conducted with the Chief Nutritionist in the Ministry of Health to solicit her views on the performance of the CMAM in terms of referring children to HIV testing. The Chief Nutritionist noted that uptake of HIV testing among malnourished children was low and that there was need to unearth service-related factors impeding uptake, so that service delivery can be improved.

## **1.9 Rationale of the study**

It is critical that nutrition rehabilitation programs, particularly among children with severe acute malnutrition (SAM), incorporate HIV testing so that children infected with HIV can be identified and referred to appropriate treatment and care services. Such referral helps to improve survival as HIV-infected children with SAM are at particular risks of death (Fergusson, Tomkins & Kerac, 2009; Collins *et al.*, 2000). Identifying children with SAM who are also infected with HIV is more crucial because they often present with features similar to HIV (Bunn, Thindwa & Kerac, 2012). It is therefore imperative that there be access to HIV testing in health facilities offering treatment of acute malnutrition. This study assessed service-related factors affecting access to HIV testing and recommended how uptake of HIV testing can be increased.

## **Chapter 2: LITERATURE REVIEW**

There has been a wide range of research into HIV and nutrition. This chapter reviewed studies related to the prevalence of HIV among malnourished children; the relationship between HIV and malnutrition on one hand and mortality on the other; acceptability of HIV testing to clients; and knowledge and attitudes on HIV and nutrition.

### **2.1 Prevalence of HIV among malnourished children**

Studies show that there is high prevalence of HIV amongst acutely malnourished children.

In a cross-sectional study aimed at quantifying the extent of HIV infection among severely malnourished children admitted in NRUs in Malawi, Thurstans *et al.* (2008) found that up to 21 percent of children were HIV infected. This study was conducted over a two weeks period; whereas the average stay of a child in NRU was longer. This discrepancy may have affected the results. Also, about 8 percent of the mothers did not consent to HIV testing of their children and were therefore excluded from the sample. This exclusion may also have biased the study results, if the mothers who did not consent did so for reasons related to their perceived chances of their children being infected. Nevertheless, other studies show comparable results. For example, a study in Tanzania also found a susceptibility of HIV- infection children to malnutrition. In a cross sectional study Sunguya *et al.* (2011) compared prevalence of malnutrition among HIV-positive children on ART to prevalence in HIV-negative children. They found a significant association (independent of ART) between HIV infection on one hand and under-nutrition and wasting on the other, as compared to HIV-negative children. Although this study was carried out in an urban setting its findings are similar to those of studies conducted in a mixture of rural and urban setting in Malawi as cited above (Thurstans *et al.*, 2008).

Indeed, the above studies' findings are supported by other literature, such as that by Carey *et al.* (1998), Bobat *et al.* (2001) and McKinney and Robertson (1993) in Hendricks *et al.* (2007), which point out the susceptibility of HIV-infected children to stunting, underweight and wasting.

## **2.2 Malnutrition, HIV infection and mortality**

Literature shows an association between malnutrition and HIV on the one hand and mortality on the other.

In a prospective cohort study conducted in Malawi, Chinkhumba, Tomkins, Banda, Mkangama & Fergusson (2008) investigated the association between HIV infection and malnutrition on one hand and death on the other by following up HIV infected children discharged from nutrition rehabilitation units (NRU). They found a significant increase in mortality in malnourished children who were HIV-infected as compared to children not infected; 35.4% versus 10.4%, respectively. These findings may have been biased by the fact that the HIV status of 13% of the patients were not known either because they had died before they were tested or for their blood samples were compromised and could not be tested. Since up to 33% of those excluded in this manner died, it may well be that they were HIV-infected, hence the early deaths. Although this study was conducted among severely malnourished children admitted in NRU, their findings on the association between HIV infection and malnutrition on the one hand and high mortality on the other may be extended to moderately malnourished children such as those enrolled in SFP. This is demonstrated by the authors' assertion that HIV treatment services amongst acutely malnourished children must not wait for children to present with severe malnutrition, but that they need to include moderately malnourished children as well. This, they argue, is because by the time children are diagnosed with severe malnutrition their clinical conditions may be irredeemable or difficult to treat.

The association between HIV and nutrition on one hand and mortality on the other is supported by other literature, like that by Gramlich & Mascioli (1995), which point to the association between HIV infection and poor dietary intake, mal-absorption of nutrients and secondary infections. It is the negative nutritional effects and the concomitant infections that may explain the high death rates, when compared to HIV-negative children.

However, according to other studies conducted in Malawi (Ndekha *et al.*, 2005 in Bahwere *et al.*, 2008) the association between HIV and malnutrition on one hand and mortality on the other is not significant. They find that with appropriate therapeutic feeding programs, HIV infected

children can achieve adequate weight-for-height growth, although the authors concede that such growth may take longer and death rates may be higher than in HIV-negative children

### **2.3 Factors affecting HIV testing and counseling**

Although HIV testing is widely known to be a crucial entry point for HIV prevention, treatment and care services, there are still a large number of people that do not undergo testing. For example, in Malawi only 28% of the sexually active population was tested in the 2010-2011 fiscal year (Government of Malawi, 2012). There are multiple factors that affect HIV testing:

An important factor in HIV testing is access to testing facilities. In a community-based survey in South Africa, Tabana *et al.* (2012) attributed low rates of testing to lack of access to health facilities, especially among rural men who are unlikely to volunteer for testing unless they are ill. Although this study did not investigate motivations of respondents for testing or not testing, its findings confirmed findings of other studies. For example, Agha (2012) also found that lack of access in terms of cost of transportation to health facilities was an impediment to HIV testing in a nationally representative secondary data survey in Mozambique. Accessibility might explain why home-based HIV testing has recently been widely recommended as a strategy for increasing HIV testing rates in Sub-Saharan Africa (Sekandi *et al.*, 2011; Mulogo, Abdulaziz, Guerra & Baine, 2011; Naik, Tabana, Doherty, Zembe & Jackson, 2011; Bwambale, Ssali, Byaruhanga, Kalyango & Karamagi, 2008; Mutale, Michel, Jürgensen & Fylkesnes, 2010).

Another factor affecting HIV testing is stigma. Using data from the Ethiopian Demographic and Health Survey, Leta, Sandøy & Fylkesnes (2012) found that HIV-related stigma was an important factor in the low utilization of voluntary HIV counseling and testing among men. Considering that this study used cross-sectional data a causal relationship between stigma and HIV testing may be difficult to establish. However, it is supported by other studies in Kenya and Uganda which also found HIV-related stigma to be a hindrance to HIV testing (Turan, Bukusi, Onono, Holzemer, Miller & Cohen, 2011; Bwambale *et al.*, 2008).

Shortage of staff has also been found to be a factor in HIV testing and counseling. For example, Heunis *et al.* (2011) conducted a qualitative study among community health workers and

HIV/AIDS managers in the Free State Province of South Africa aimed at exploring barriers to and facilitators of utilization of HIV counseling and testing (HCT) among TB patients. The authors found that shortage of staff was an impediment to HIV testing among TB patients. Although this study was based solely on respondents' subjective perceptions of barriers and enablers of HIV testing, it is supported by other studies. For example, in an equity analysis of access to HIV testing and ART among HIV-infected patients in Malawi, Makwiza, Nyirenda, Bongololo, Banda, Chimzizi & Theobald (2009) found that shortage in staff was an impediment to access to HIV testing. Similarly, a study conducted among health care workers to evaluate the institutional capacity to implement provider-initiated HIV testing of patients in government health facilities in Zimbabwe, it was also found that shortage in staff was a limiting factor to provision of HIV testing (Sibanda *et al.*, 2012).

Another factor affecting HIV testing is shortage of resources. For example, in a qualitative review of Zimbabwe's provider-initiated HIV testing, Sibanda *et al.*, 2012 found that lack of HIV test kits was an important hindrance to testing. Although this study was conducted in a limited number of purposively selected health facilities and its findings may therefore not be generalized to other settings, it reflects the evident lack of medical resources in the region including Malawi (Lufesi, Andrew & Aursnes, 2007). One study in Malawi, however, found HTC sites well stocked with HIV test kits (Jereni & Muula, 2008). This study is different from other studies in that it was conducted exclusively among facilities located in an urban setting in one of the major cities of the country.

Studies reveal mixed results with regard to education attainment as a factor in uptake of HIV testing and counseling. For example, in a cross-sectional survey of informal urban settlements in Kenya, Ziraba *et al.* (2011) found that while higher education was associated with more likelihood of client-initiated HIV testing; lower education was associated with a higher likelihood of provider-initiated testing. In other studies, Ikechebelu, Udigwe & Ngozi (2006) found that lower education was a hindrance to HIV testing amongst women; and similarly Yahaya, Jimoh & Balogun (2010) found that ignorance was associated with less likelihood of HIV testing amongst youths.

Gender is another factor affecting HIV testing and counseling. In a cross-sectional survey using a demographic surveillance system in Kenya Ziraba *et al.* (2011) found that significantly more women than men tested for HIV. The authors attributed this finding to the fact that HIV testing is an entry point to prevention of mother transmission (MPTCT), which is a widely promoted intervention in HIV prevention among women. Makwiza *et al.* (2009) also found that more women than men underwent testing in their study in Malawi and similarly attributed this disparity to women's better access to testing through antenatal and PMTCT services. The finding that women have more access to HIV testing through these two services might explain why other studies (Naik *et al.*, 2011) show that a higher proportion of men test through home-based HIV testing than through facility-based testing.

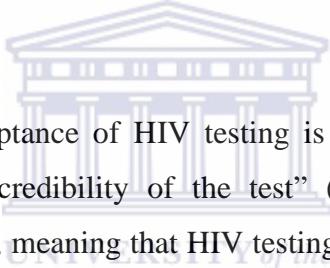
#### **2.4 Acceptance of HIV testing and counseling**

Identification of acutely malnourished children that are HIV infected pre-requires an HIV test, which in turn implies that clients accept such testing. A number of studies have been conducted in Malawi to assess the acceptability of HIV testing to CMAM clients. Thurstans *et al.* (2008) assessed the acceptance of HIV testing to care-givers of severely malnourished children admitted in NRUs. They found high acceptance of HIV testing of children, 91%. The small number of NRUs studied may have introduced selection bias in this study's results. Also, being conducted in only one component of CMAM which is peculiar for being in an in-patient setting, the findings from this study may only be generalized to in-patient settings of CMAM.

Nevertheless, Bahwere *et al.* (2008) found that there is similar acceptance of HIV testing in out-patient settings of CMAM as well. In a retrospective and prospective community-based cohort study the authors studied subjects enrolled in community therapeutic care (CTC) program (now called Out-patient Therapeutic Program or OTP) to measure uptake of HIV testing. They also found a high acceptance of HIV testing and concluded that the CTC program offered a viable entry point for HIV testing of severely malnourished children. However, this conclusion was based on nutrition recovery rates that the study observed in children that were diagnosed HIV-positive and on the basis of which were put on a nutrition rehabilitation regime. However, the accuracy of the nutritional measurements on which recovery rates were based was not verified.

High acceptance of HIV testing has been found in other similar settings in Malawi, such as in amongst women in antenatal clinics (Manzi *et al.*, 2005). Although in this study testing was for women and not children, it should be noted that typically it is mothers who bring children to CMAM services.

Nevertheless, acceptance of HIV testing faces barriers. In a longitudinal, exploratory and descriptive study conducted among women and men in a community in Uganda, Mugisha, van Rensburg & Potgieter (2010) found that the most important barriers to testing to be fear of results, belief that it was unnecessary and lack of time. Although this study was conducted in community setting, its findings are comparable to another study, also conducted in Uganda, which assessed both facility and home based uptake of HIV testing. In this study, fear of discrimination and long distance from health facilities were found to be an important barrier to testing (Mulogo *et al.*, 2011)



One of the catalysts of high acceptance of HIV testing is what has been coined “three C’s: convenience, confidentiality and credibility of the test” (Angotti, Bula, Gaydosh, Kimchi, Thornton & Yeatman, 2009: 2263); meaning that HIV testing is more acceptable to clients when it is easily accessible; when it is conducted in privacy; and produces results that clients trust. The authors based these assertions based on findings of an exploratory study of door-to-door HIV testing in Malawi. Although the study was conducted in a home-based setting, the authors recommend that the concept of “three C’s” may be adapted to other rural African settings as well.

Another way of increasing acceptance of testing, particularly for women, has been found to be couple counseling. In a cross-sectional quantitative study conducted in Ethiopia, Malaju & Alene (2012) found that couple counseling increased acceptability of testing of both sex partners and to reduce HIV-related violence on women from their partner that may emanate from disclosure of an HIV-positive test that is conducted without their prior consent of the male partner. Being cross-sectional study in design this study cannot claim causality between couple counseling and acceptance of testing per se. That being said, its findings are supported by another study conducted in Zambia and Rwanda (Allen *et al.*, 2007). Also, a formative study to assess

perceptions to couple HIV counseling and testing in Botswana found a general preference for couple as opposed to individual testing. Of particular note with regard to women, the study also found that individual testing resulted in fear of reaction of their partners to disclosure of a positive HIV test result (Kebaabetswe *et al.*, 2010).

Other studies, however, have found couple counseling and testing to be undesirable among men. In a study in rural Uganda by Larsson, Thorson, Nsabagasani, Namusoko, Popenoe & Ekström (2010) men cited fear of mistrust between partners where only one partner tested HIV positive; long distance to health facilities; delays in waiting time; fear of stigma; bad attitude of health workers and that facilities were not male-friendly as reasons for undesirability of couple testing. A potential weakness of this study is that a female conducted interviews of men. Nevertheless focus group discussions, some of which were also carried out by the same female, yielded similar responses. The potential weaknesses aside, the value of the findings of this study, as the authors point out, is in the need to take gender into account when implementing couple HIV counseling and testing.

## 2.5 Knowledge and attitudes on nutrition

The first form of nutrition recommended for a child from birth is breast milk. According to WHO (2012) breast milk contains all the nutrients needed for an infant in the first six months of life. This is in addition the protective properties of breast milk against common childhood illnesses. To optimize use of breast milk, there is widespread promotion of exclusive breastfeeding which is defined as feeding an infant only breast milk from birth to 6 months of age at the exclusion of all other fluid or solid foods except oral rehydration solution, or drops of vitamins, minerals or medicines (WHO, 2012). In addition, exclusive breastfeeding is promoted in the prevention of mother-to-child transmission of HIV, as it reduces the risk of transmission of HIV through breastfeeding (WHO, 2010).

Studies show that while breastfeeding is a common cultural norm in sub-Saharan Africa exclusive breastfeeding has not been achieved owing partly to knowledge, attitudes and beliefs surrounding breastfeeding.

In a qualitative study conducted in Malawi Chinkonde, Hem and Sundby (2012) found that breastfeeding is regarded as the only culturally acceptable method of feeding an infant and that a woman who breastfeeds is viewed as a loving mother. This study was conducted in only two public health facilities located in one city and its results may not be generalized to other settings. However, it is supported by a national survey, the Demographic and Health Survey, which shows that nearly all Malawian mothers breastfeed their infants (National Statistical Office, 2010). However, the same survey reports that only 72% of children within 0-6 months of age are exclusively breastfed. Introduction of complementary foods before the age of 6 months has been observed in studies in other countries as well. For example, in a longitudinal survey in two slums of Nairobi Kimani-Murage at al., 2011 attribute early introduction of complementary foods partly to the belief that breast milk is not sufficient for an infant's growth. This study did not explore socio-economic factors that may have influenced early introduction of complementary foods. However, Kakute *et al.* (2005) who found similar beliefs also examined socio-economic factors and found that some of the reasons women deemed exclusive breastfeeding difficult was due to economic activity demands outside of home.

Studies further show that similar perceptions about breastfeeding as cited above extend to health workers as well. In a qualitative study intervention to improve infant feeding among HIV-positive mothers, Leshabari, Koniz-Boher, Åstrøm, de Paoli and Moland (2006) found that health workers who counseled mothers on infant feeding did not believe that women would or could adhere to exclusive breastfeeding. These findings are supported by those of Piwoz *et al.* (2009) who also found that cultural norms influenced messages delivered by health workers to mothers on exclusive breastfeeding, although their study was limited in that it was conducted on a small sample of purposively selected health workers.

In terms of causes of malnutrition, studies show other perceptions and beliefs among women. In a qualitative study to assess the quality of care in Malawi's nutrition rehabilitation units Fergusson *et al.* (2009) found that mothers attributed malnutrition in their children to fate predetermined by God. This study was limited in that it was conducted in a facility setting among women who opted to take their children to the NRU and its findings can only be generalized to similar settings. However, the findings on misconceptions about causes

malnutrition are supported by studies conducted in Malawian community settings as well. In a qualitative study in northern Malawian community Sikstrom, Kerr & Dakishoni (2011) found that a wide range of childhood illnesses, including malnutrition, were attributed by cultural sexual taboos.

Inadequate knowledge on nutrition has also been found among health workers in Malawi (Fergusson *et al.*, 2009) and in other countries (Puone, Sanders, Ashwort & Ngumbela, 2006); Kgaphola, Wodarski & Garrison, 1997). In a qualitative study aimed at assessing attitudes of nurses towards severely malnourished children and their caregivers, Puone *et al.* (2006) found that nurses had inadequate knowledge on management of severe malnutrition; harbored negative attitudes towards malnourished children and their caregivers; and that these attitudes in turn affected the quality of care that they provided. The authors further found that training did improve attitudes and quality of care provided by nurses. Similarly, Kgaphola *et al.* (1997: 300) found that health workers' lack of knowledge on nutrition was linked to their beliefs through what the authors called the "relationship between knowledge, attitudes and practice".

## 2.6 Knowledge and attitudes on HIV

Studies in Malawi show that knowledge of HIV transmission and prevention is generally high among Malawian mothers (Tadesse & Muula, 2004). This finding is a reflection of the generally high awareness on HIV in Malawian population as shown by other studies (National Statistical Office, 2010; Hung Che Chiang *et al.*, 2009; Chirwa, Malata & Norr, 2012).

Similarly, a formative study conducted in Tanzania found that women are generally aware that HIV infection can be transmitted from a mother to a child during pregnancy, childbirth and breastfeeding (Leshabari *et al.*, 2006). The study also assessed mothers' perceptions on exclusive breastfeeding as a prevention measure of mother to child transmission of HIV and found that mothers regarded breast milk as inadequate to sustain a child's growth and deemed exclusive breastfeeding as being difficult to achieve considering that they had chores to undertake outside home.

In terms knowledge of HIV among health workers, studies show mixed results. Studies by Fergusson *et al.* (2009) in Malawi and Sadob, Fawole, Sadoh, Oladimeji, Sotiloye (2006) in Nigeria found inadequate knowledge among staff on HIV. Other studies, however, such as that

by Delobelle, Rawlinson, Ntuli, Malatsi, Decock & Depoorter (2009) found fairly adequate knowledge among South African health workers.

Studies also show contrasting findings on staff attitudes towards HIV clients. Whereas Sadob *et al.* (2006) found that health workers caring for HIV-positive patients demonstrated discriminatory attitudes based on patients' sero-status; Delobelle *et al.* (2009) on the other hand found that health workers showed empathetic attitudes towards HIV-positive patients.

## **2.7 Content of health care worker training on HIV**

There is a diverse range of HIV training models for health workers in terms of their content, depending on setting and target groups of such training. A few are reviewed here:

For example, Schull *et al.* (2011) describe a Malawi HIV training model for health care workers which integrated HIV/AIDS into primary health care and was composed mainly of training in: treatment of respiratory infections, tuberculosis, malaria, sexually transmitted infections, HIV prevention, HIV testing, PMTCT and HIV care and antiretroviral therapy.

Lifson, Rybicki, Hadsall, Dickinson, Van Zyl & Carr (2009) report on a nationwide HIV training program for rural based health staff in South Africa that aimed at imparting skills mainly on how to: (a) conduct sexual histories and risk assessments, (b) educate clients about risk reduction and prevention, (c) screen for and diagnose these infections, (d) clinically manage clients with positive screening test results, and (e) access prevention and other educational materials.

On the other hand, Toro *et al.* (2012) describe a multidisciplinary training program for HIV care to families across Cote d'Ivoire, Cameroon, Mozambique, Kenya, Rwanda, Uganda, Zambia, South Africa, and Thailand that covered psychosocial needs, adherence to care and treatment, disclosure, nutritional, and economic issues. The multidisciplinary nature of this training program is reflected by multi-sectoral nature of the topics addressed.

The literature above shows that typically training of health workers on HIV does not include nutrition, except where it is conducted for the purpose of a multi-sectoral program, such as cited by Toro *et al.* (2012).

In conclusion, in terms of knowledge and attitudes, literature shows a generally high willingness or acceptance of HIV testing in most settings. However, studies also demonstrate that fear of discrimination and of partner reaction to a non-sanctioned test result; poor accessibility to testing facilities are the most recurring client-related barriers to testing. Also studies show a high awareness of HIV among the population is an enabler of testing; while lack of knowledge on HIV among health care workers is a hindrance to HIV testing. In terms of nutrition, studies show that there is limited knowledge among both clients and health care workers and that training of health care workers on HIV does not include training on nutrition.



## **Chapter 3: METHODOLOGY**

### **3.1 Aim of the study**

This study aimed to assess the uptake of HIV testing services among malnourished children enrolled in CMAM; and to determine factors affecting uptake.

### **3.2 Objectives of the study**

- (a) To assess the proportion of children enrolled in CMAM who are tested for HIV.
- (b) To determine service-related factors that are associated with uptake of HIV testing among children enrolled in CMAM

### **3.3 Study design**

This was a descriptive study that utilized mixed methods of data collection. A quantitative method was used to determine the numerical aspects of the study, i.e. the number of children who have been tested for HIV and a qualitative method to describe factors that affected uptake of HIV testing in the CMAM program. A qualitative method was chosen because of the need to gather in-depth understanding of human behavior (Baum, 1995), specifically, experiences of health workers with regard to uptake of HIV testing. The outcome of interest was successful HIV testing.

For purposes of this study “successful” testing referred to a child being referred from CMAM, actually getting tested for HIV and the guardian being informed of the result. “Unsuccessful” testing meant a child was either not referred in the first place, or being referred but not being tested or/and the guardian not being informed of the test results.

A descriptive study was chosen because the study aimed to describe the situation as it was without interfering with it (Beaglehole, Bonita & Kjellsrom, 1993), i.e., the researcher sought to determine factors affecting uptake of HIV testing through a referral system from one program to another without tampering with the system within which referral and testing was undertaken.

### **3.4 Study setting**

The study was undertaken in Dowa, a rural district located in the central region of Malawi, north of Lilongwe the capital city of Malawi. Dowa district has a population of 556,678 people (National Statistical Office, 2008). Administratively, the district is divided into 7 traditional authorities, which are further subdivided into group-villages and then villages as the smallest administrative unit.

The majority of the people of Dowa district subsist by small-scale non-commercial farming. Mobility within the district, including access to health facilities, is typically by foot, bicycles or ox-cart through dirt roads.

At the district headquarters is located the District Health Office (DHO) from which all health services in the district are managed. The DHO also hosts the district hospital which is the largest health facility in the district. In the remote parts of the district are located 16 government-run health centres which are typically smaller than the district hospital in both the range and comprehensiveness of services they offer. All 16 government-run health facilities have both OTP and SFP services; and all offer HTC services. For the purpose of this study ‘government-run’ health facilities excluded those run by other entities, like the Christian Health Association of Malawi (CHAM), which are part-funded by and run under the oversight of the government. Non-government-run facilities were excluded because they have peculiar features, such as monetary cost to some services offered to clients, which is typically not the case with government-run facilities which are in majority in the district and in the country.

### **3.5 Population and Sampling**

A multistage sampling procedure was used in this study. The first was selection of a district; the second of sampling sites within the selected district and the third stage that of selecting program focal persons to be interviewed.

#### **(i) Sampling stage one –district:**

The study was, for logistical reasons, conducted in the central region of Malawi, within which Lilongwe city is located, where the researcher is resident. In the central region there are seven districts. Four districts which border Lilongwe district will form the study population due to their

proximity to Lilongwe. Among these four, one district (Dowa) was purposively selected based on the comprehensiveness of the CMAM services offered. To be comprehensive, CMAM services need to contain the full package of programs for management of acute malnutrition, i.e. NRU, OTP and SFP, such that malnourished children can be referred to the most appropriate program depending on severity of their condition. In the other three districts surrounding Lilongwe CMAM services are less comprehensive in that there are facilities which offer OTP but not SFP services, such that moderately malnourished children (treated in SFP) have to be referred elsewhere to access treatment.

Dowa district was purposely selected because among the four districts that border Lilongwe city, including Lilongwe itself, it has the highest coverage of CMAM services, particularly OTP and SFP, at 100% of government health facilities for both services. The full package of CMAM services is for all facilities with NRU to offer OTP and SFP services as well; and for all OTP sites to offer SFP. This scenario, which is the case in Dowa district, offers the ideal continuum of care for CMAM services.

#### (ii) Sampling stage two – sites:

The study population of sites was 18 government-run health facilities, which are the facilities that also have HTC services in Dowa district. Since the study sought to investigate uptake of HIV testing in CMAM, only sites that had both services were part of the sample. Of these 16 sites, 6 sites were randomly sampled, representing 38% of the total number government facilities in the district.

#### (iii) Sampling stage three – focal persons:

In the sampled district there was one district focal person for CMAM and another for HTC. These two were purposively selected on the basis of their knowledge of the two programs in the district.

At each of the 6 sites selected, respondents were purposively sampled by virtue of being focal persons of either CMAM or HTC. At 3 of the 6 sites sampled, two health workers were interviewed: one a focal person for CMAM and another for HTC; making a total of 6. At the

other 3 sites the focal point for CMAM and HTC was one person, so these 3 sites yielded 3 respondents. In total therefore 9 facility-based health workers were interviewed.

These 9 facility-level staff plus the two district-level focal persons made up a total of 11 respondents in the study.

### **3.6 Data collection**

Two methods of data collection were used in this study.

- (i) To determine the number of children enrolled in CMAM who were tested for HIV record reviews were conducted. This data was extracted from CMAM client registers covering the previous 12 months (January – December 2012). For each month, the number of clients enrolled in CMAM was tallied against the number successfully tested for HIV; and 12-month total of the two data sets were computed for each site.
- (ii) To describe factors that affected uptake of HIV testing among children, in-depth interviews were conducted with facility-level CMAM and HTC focal persons, using an interview guide (Appendix 1). Open-ended questions were asked and a diary was kept of interview information (Appendix 7). Interviews were also tape-recorded. Interview questions were asked in a combination of English and Chichewa, the former being official language and the latter the most widely spoken language in Malawi.

### **3.7 Data cleaning and analysis**

**Percentage uptake of HIV testing** was analyzed by calculating number of children successfully tested of HIV as a percentage of number of children enrolled in CMAM, using Microsoft Excel. Where records were incomplete, we asked the respondents to estimate a percentage uptake based on their observations and experience.

Cleaning of data from in-depth interviews was done as data was being collected by seeking clarification or probing where respondents' answers were unclear. Thematic analysis was utilized to analyse qualitative data from in-depth interviews by summarizing it into common themes in terms of factors affecting uptake of HIV testing.

### **3.8 Rigor**

#### **Data credibility and trustworthiness**

To ensure data credibility and trustworthiness information provided by one respondent was checked against information given by another respondent in the same facility. Information gathered at facilities was also cross-checked with district focal persons. All interviews were tape-recorded as back-up to interview diary. At the end of each interview, notes were summarized and dictated back to the respondent to check if the information was an accurate reflection of the interview.

### **3.9 Ethics considerations**

All research, particularly health research, needs to be conducted with ethical considerations (Benatar, 2002). It is vital that health research respects the privacy, confidentiality and human rights of study subjects. In addition, study subjects need to be made aware, prior to participating in a study, of the risks they may be exposed to.

Ethics clearance of the study was obtained first from the University of the Western Cape Ethics Committee and then from Malawi's National Health Sciences Research Committee (Appendix 6). At the data collection stage, every respondent was asked to sign a consent form (Appendices 2, 3, 4 & 5) to participate in the study. The purpose of the consent form was to ensure that the respondents participated in study having made an informed choice and having been accorded their due rights. Through the information sheet, respondents were briefed on the nature of the study and the costs and benefits of participating in the study; were given liberty to withdraw from the study if they so decide; and were assured of confidentiality of all information collected in the study.

## **Chapter 4: RESULTS**

This chapter presents findings of the study and demographic characteristics of study participants. The findings are presented first of percentage uptake of HIV testing in CMAM generated from record review and then of factors that affect uptake as gathered from in-depth interviews. The factors affecting uptake fell into the following four themes:

- Lack of resources or intermittent supply of resources for HIV testing
- Lack of staff skilled in HIV testing and counseling
- Inadequately trained staff
- Low commitment among staff in referring children for HIV testing

### **4.1 Demographic characteristics of study participants**

Table 1 below shows that the 11 study participants ranged in age between 30 to 50 years and 7 were males and 4 were females. In terms of cadre 9 of the participants were health surveillance assistants; one was a nutritionist and one was a laboratory technician. 9 participants were educated to O-level and two above O-level.

Table 1: Participant demographic characteristics

<b>Characteristic</b>	<b>Male</b>	<b>Female</b>	<b>Total</b>
<b>Age</b>			
30-40	2	3	5
40-50	5	1	6
<b>Education</b>			
O Level	6	3	9
Above O level	1	1	2
<b>Cadre</b>			
Health Surveillance Assistant	6	3	9
Nutritionist	0	1	1
Laboratory technician	1	0	1

#### **4.2 Percentage number of children tested for HIV in CMAM:**

Table 1 below shows that of the 2981 children newly enrolled into CMAM during the study period the highest number that was tested was 1738, representing an uptake of 58%. This is based on record review of CMAM client registers.

Table 2: Percentage uptake of HIV testing in health facilities (n=6)

No.	Facility name & Program	Number newly enrolled	Number HIV-tested	Percentage tested
1	Kasese Health Centre (OTP)	89	82	92%
	Kasese Health Centre (SFP)	360	324	90%
2	Chakhaza Health Centre (OTP)	90	77	86%
	Chakhaza Health Centre (SFP)	386	328	85%
3	Chankhungu Health Centre (OTP)	92	57	62%
	Chankhungu Health Centre (SFP)	379	216	57%
4	Mponela Rural Hospital (OTP)	101	45	45%
	Mponela Rural Hospital (SFP)	400	182	46%
5	Thonje Health Centre (OTP)	87	22	25%
	Thonje Health Centre (SFP)	386	80	21%
6	Dowa District Hospital (NRU)	123	123	100%
	Dowa District Hospital (OTP)	139	63	45%
	Dowa District Hospital (SFP)	349	139	40%
<b>Average</b>		<b>2981</b>	<b>1738</b>	<b>58%</b>

The finding that 58% of children were tested for HIV represents an equal percentage acceptance of HIV testing amongst clients, as HIV testing in CMAM is provider-initiated, meaning that a health care provider specifically recommends testing and testing is carried out unless the client does not accept it (WHO, 2012; WHO/UNAIDS, 2007).

The reasons behind non-acceptance centered round fear, notably fear among women of a partner's reaction to revelation of a child's or their own HIV-positive status.

One health worker said:

*"A lot of mothers are afraid of the test. They think that if their child tests positive then they must be positive as well".*

Upon probing with another respondent to find out the context of fear of testing, they said:

*"A lot of the women fear that their husband is going to be angry at them if they are found HIV positive, so they do not want to get tested".*

However, in all (4) facilities where this challenge was reported, it was noted by those interviewed that with repeated motivational messages to guardians in the course of a child's stay in CMAM acceptance generally increased. A respondent explained by saying:

*"It takes repeated messages to get clients to test. Usually not many clients test when they start receiving nutrition rations but with our persistence in motivating them during subsequent visits more of them accept to get tested."*

The interviews revealed, however, that acceptance of testing had improved over the years.

### **4.3 Factors affecting uptake of HIV testing**

In in-depth interviews study participants were asked to cite what they regarded as the most important challenges faced in uptake of HIV testing of CMAM clients. Four themes were revealed in terms of factors affecting uptake as presented below:

#### **4.3.1 Lack of resources for HIV testing**

The study found that the main resource affecting uptake of HIV testing is test kits. All sites but one reported intermittent supply of HIV testing kits throughout the period of the study (January – December 2012). HIV test kits are most commonly delivered from Ministry of Health headquarters directly to health facilities; although at other times they are delivered to the main (district) hospital for secondary delivery to peripheral health facilities.

At the time of the study, two sites were found to have curtailed HIV testing for all clients except pregnant women for the purpose of prevention of mother-to-child transmission of HIV (PMTCT). In the rest of the sites, test kits were available for all clients at the time of the study. In sites that reported intermittent supply of kits the study found that it was standard practice to prioritize PMTCT when testing kits are in short supply. In such cases all other clients, including children enrolled in CMAM, are not tested. The following quote from a respondent exemplifies this finding:

*“...for example, right now there is nothing we can do. We do not have enough test kits, so the few that we have we are using them to test pregnant women”*

In relation to this practice, the study also found that there are non-governmental organizations (NGO) providing testing kits specifically for PMTCT, although it was reported that when these PMTCT-specific supplies are plentiful they are sometimes used to test non-PMTCT clients as well. Another respondent had this to say:

*“We also get test kits from Partners for Hope who has a PMTCT project in the area. So when they give us a lot of kits we sometimes use them to test other clients”*

Yet another respondent emphasized the magnitude of this challenge by saying:

*“You know, it’s really unfortunate that we have stock-outs of test kits. The thing about HIV testing is that once we miss a client, we may never get another chance, as the client may get lazy to return for a test”*

The district HTC focal person added poor coordination within health facilities in placing of orders as also contributing to shortage of test kits. He said:

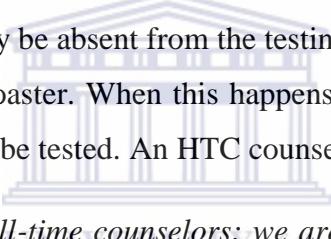
*“I must admit that part of the problem is that we do not coordinate properly amongst ourselves. Because of that we end up ordering less test kits than we actually need”*

#### **4.3.2 Shortage of staff skilled in HIV testing and counseling**

All clients who require an HIV test are referred to a certified HTC counselor who conducts counseling and testing. As standard practice only a certified counselor can carry out HTC in Malawi. This was also the case in all study sites.

The study found an average 5 HTC counselors at a facility, in a range of 1 to 16 counselors per facility. The average is highly skewed by the district (main) hospital and one rural hospital which have 16 and 6 counselors respectively. The rest of the facilities have average 3 counselors and in these latter sites HTC focal persons reported that they deemed the number of staff for CMAM as being inadequate.

This factor was reported in 4 of the 6 study sites. Where the challenge was reported (staffed by an average 3 counselors per site), it was found that counselors alternate duties through a roaster. It was further found that due to work-overload sometimes the counselors cannot cope with all clients referred to them on a given day, for instance on the day of antenatal clinic where pregnant women are tested for the purpose of PMTCT. As it was noted elsewhere in the findings, PMTCT generally received the highest priority in HIV testing. Of note is related finding that HTC staff are not full-time counselors but have other duties like the rest of their cadre, health surveillance assistants (HSA). As such, they may be absent from the testing facility in parts of the day or days of the week assigned to them by roaster. When this happens, the study found, clients including those referred from CMAM cannot be tested. An HTC counselor said that:

  
*"The thing is we are not full-time counselors; we are health surveillance assistants like everyone else. So, we have to juggle HIV testing and other duties in the catchment area allocated to us"*

At one site the lone counselor said:

*"You know, I am the only one, I live about 10 to 11 kilometers from here and I commute by bicycle. So as you can imagine I am overloaded with work"*

#### **4.3.3 Lack of commitment among staff in referring children for HIV testing**

In all sites the CMAM focal persons expressed dissatisfaction with commitment or diligence of staff in referring children to HTC at entry into CMAM and in following up on children that had not been tested at entry. This meant that some clients were not referred to HIV testing.

It was found that this challenge is two-fold: on one hand, not all children are referred to HIV testing at entry into CMAM; and on the other, those not tested at entry are not fully followed up in subsequent visits. This was reported in all but two sites. This challenge, however, was found

to be peculiar to OTP and SFP facilities, as the only NRU did not report it. The reasons behind non-referral were mainly lack of motivation to or/and appreciation on the part of CMAM staff of importance of referring malnourished children to HIV testing. One CMAM focal person said:

*“What I think is that a lot of our staff do not think that it is such an important thing to refer children for testing. That is where the problem lies”*

The lack of diligence in referring children to testing was attributed to another finding, which is that at the time CMAM staff were last trained (four years earlier) there had been little emphasis, if any, on such referral. Indeed the study recorded that the current tools, which require reporting of number of clients referred to HTC and those tested, are a recent (after-training) introduction. In relation to this finding, one respondent said:

*“You know, during training nothing was said by referring children to HIV testing. We only received reporting forms and were told by telephone that we should start referring children”*

A CMAM focal person at a site that had no record of children tested was more blatant in his response by saying:

*“Let me be honest with you, we actually do not refer any children from CMAM here. You did well to ask me this question because you reminded me that it is something we should be doing, but we just have been complacent about it”*

#### **4.3.4 Inadequately trained Staff**

The study found that all 94 health workers involved in CMAM had been trained in management of acute malnutrition. However, the majority had last been trained about 4 years earlier.

All 6 facility-based CMAM focal persons interviewed reported that staff was generally in need of more up-to-date refresher training. Notably, respondents cited lack of skills among CMAM staff in motivating mothers to have their children tested. This was attributed to the fact that CMAM staff who are typically health surveillance assistants by cadre, are not trained in counseling. Upon probing further, there was consensus among those that cited this challenge that such training did not have to be ‘full’ 5-week training such as is undergone by certified HTC

counselors, but merely training on basic concepts of counseling provided as part of training in management of acute malnutrition.

One focal person of CMAM said:

*“Most of the staff does not have skills to convince clients to go and test. As you know, CMAM staff is not trained in counseling. I think that if staff received training in counseling, we would be able to refer more clients to HIV testing”.*

Another respondent concurred and explained that:

*“...it is not like we need full training which our colleagues who are counselors receive, but a few basic counseling skills is all we need”.*

#### **4.4 How uptake of HIV testing could be increased**

Based on the challenges above, each respondent was asked to suggest how uptake of HIV testing could be improved. In the main, focal persons interviewed suggested that there was need to:

##### **4.4.1 Ensure sufficient and uninterrupted supply of HIV test kits**

Five of the 6 study sites reported this as a means to increase uptake of testing among children enrolled in CMAM. The one site that did not cite this measure also did not report a challenge is the supply of test kits.

##### **4.4.2 Deploy more staff in HTC**

In sites which cited inadequate HTC staff as negatively affecting uptake of HIV testing (5 of the 6 sites in study) interviewees also suggested increasing the number of HTC counselors. These sites reported overwhelming workload for counselors who on one hand are inadequate in numbers and on the other had to perform other duties required of them as health surveillance assistants.

#### **4.4.3 Provide training to CMAM staff in counseling**

In 4 of the 6 sites, CMAM focal persons reported that more know-how amongst staff in counseling may help to motivate clients and increase acceptance of testing. This training need not be full HTC training such as is provided to certified counselors.

#### **4.4.4 Orient CMAM staff on importance of referral to HIV testing**

In 4 of the 6 sites studied it was contended that more children could be referred to testing if CMAM staff received orientation on the importance of referring children to HIV testing. This measure was suggested by staff in facilities which reported lack of commitment and/or appreciation of the importance of testing amongst staff. Further basis of this suggestion was the finding, noted earlier, that at the time of training of staff four years earlier referral of malnourished children to HTC had not been emphasized, neither did reporting tools they were trained on have provision for clients' sero-status.

In summary, the findings show that 58% of children enrolled in CMAM are tested of HIV. There are four main themes in terms of factors that affect uptake of HI testing, that is, lack of resources or intermittent supply of resources for HIV testing; lack of staff skilled in HIV testing and counseling; low commitment among staff in referring children for HIV testing; and inadequately trained staff. Suggested ways of addressing these factors are by ensuring sufficient and uninterrupted supply of HIV test kits; deploying more staff trained in HTC; providing training to CMAM staff in counseling; and orienting CMAM staff on the importance of referring children to HIV testing.

## **Chapter 5: DISCUSSION**

In this chapter study findings are discussed in comparison with related published studies.

### **5.1 Percentage number of children tested for HIV in CMAM**

Uptake of HIV testing amongst children enrolled in CMAM in Dowa district was moderately low at 58%. The highest reported percentage uptake of HIV testing in CMAM was 94% as found in CTC (now called OTP) by Bahwere *et al.* (2008); and 91% in NRU by Thurstans *et al.* (2008). The current study's finding of low uptake is simply a confirmation of secondary national data which shows that only 26% children enrolled in CMAM nationally were tested for HIV in 2012. This was the very basis of this study, as outlined in the 'problem statement'. Nevertheless, percentage uptake in Dowa was found to be higher than the national average (26%) over the study period (January – December 2012). Uptake of testing in this study is higher than national average possibly because it may have been over-estimated, as record keeping of children referred and tested for HIV was generally found to be poor or incomplete.

The finding of low uptake of HIV testing reflects similarly low acceptance amongst clients, as HIV testing in CMAM is provider-initiated, meaning that a health care provider specifically recommends testing and testing is carried out unless the client does not accept it (WHO, 2012; WHO/UNAIDS, 2007).

This study found that the main reason behind overall low acceptance was fear, notably fear of a partner's reaction to revelation of a positive test result in cases where the partner does not know their sero-status. Indeed, this finding has parallels with a prior study which found that Malawian men stressed importance of prior spousal agreement and even considered HIV testing without their consent a valid reason for divorce (Aarnio, Olsson, Chimbiri & Kulmala, 2009). Similar fears of a male partner's reaction to results of a non-sanctioned HIV test were also found among women in Botswana (Kebaabetswe *et al.*, 2010). It is possible that this fears among CMAM clients (who are typically women) is linked to power relations that typify Malawian marital partnerships as personally observed the author of this study. In a context where a man yields more social power it is possible that a woman may indeed be unwilling to have their child tested for HIV without prior sanction from their partner. It is my opinion though that fear may also be of stigma from other community members. Although the general view in Malawi is that HIV-

related stigma has decreased with time and awareness, it is my observation that stigma has not been totally eliminated and is still a hindrance to HIV testing. Indeed, the very fact that women are afraid of the reaction of their partners to a positive HIV test may imply fear of stigma or rejection.

The lack of acceptance found in this study does not seem to stem from lack of awareness of the importance of testing, as studies have found a general high awareness of HIV in Malawi (Tadesse & Muula, 2004; National Statistical Office, 2010; Hung Che Chiang et al., 2009; Chirwa *et al.*, 2012). This is also in agreement with the author's personal observation, although awareness alone may not lead to acceptance of an HIV test.

It is worth noting that when looked in isolation the NRU was found to have a high uptake and acceptance of HIV testing at 100%. This finding has parallels with another study also conducted in Malawi by Thurstans *et al.* (2008) which also found a high acceptance of 91% among caregivers in NRUs for testing of children. The reasons behind this peculiarity are beyond the scope of this study. Nevertheless it is worth pointing out that NRU is the only component of the CMAM that operates in an in-patient setting and it admits the most critical cases of acute malnutrition. It is vital that children with severe acute malnutrition (SAM) are tested for HIV so that those who are infected are referred to appropriate treatment and care services. Such services help to improve survival as HIV-infected children with SAM are at particular risks of death (Fergusson, Tomkins & Kerac, 2009; Collins, Dent, Binns, Bahwere, Sadler & Hallam, 2000). It is therefore the opinion of the author that the higher uptake of HIV testing in NRU compared to OTP and SFP may be attributed to the fact that NRU clients are typically in very critical conditions and therefore this gives health workers more impetus to insist that NRU children be tested. Such impetus may not be present in relation to the less severe cases of malnutrition in OTP and SFP. Also, in my opinion, it is likely that the fact that NRU clients are treated as inpatients and are fewer in numbers make it easier for health workers to ensure that they are all tested for HIV.

## **5.2 Factors affecting uptake of HIV testing**

Four main factors emerged from in-depth interviews as affecting uptake of HIV testing. These are:

- Lack of resources for HIV testing
- Shortage of staff skilled in HIV testing and counseling
- Lack of commitment among staff in referring children for HIV testing
- Inadequately trained staff

### **5.2.1 Lack of resources for HIV testing**

Intermittent supply of HIV test kits is an important and long standing factor affecting uptake of HIV testing in CMAM clients in Dowa district. In the absence of test kits all other efforts by staff, such as motivating guardians to test, are rendered futile. The intermittence in supply of test kits was found to be a result of a combination of general shortage of test kits in the country and logistical flaws between national stores and district facilities. With regard to logistics, it was also found that due to poor coordination among departments in health facilities there are frequent inaccuracies in the quantities of test kits ordered by the District Health Office, leading to quantities ordered being less than requirements. However, the intermittence in supply of kits, as was found in this study, is also a reflection of the general shortage and logistical shortcomings in supply of medicines and supplies in the wider government health care system in Malawi (Lufesi, et al., 2007). Stock-out of HIV test kits has also been identified as a hindrance to HIV testing uptake in other countries. In a review of provider-initiated HIV testing in Zimbabwe Sibanda *et al.* (2012) found that shortage of test kits was one of the factors that limited utilization of HIV testing. It is my opinion that stock-outs of test kits, as found in this study, is indeed a major hindrance to HIV testing in Dowa district going by my observation of the general shortage of medical resources in Malawi

In addition, where test kits are in short supply, CMAM clients do not receive high priority relative to clients of other programs such as PMTCT. This scenario is entrenched by the finding that some of the test kits are supplied to health facilities by NGO's specifically for PMTCT. The

priority accorded to HIV over other conditions where resources are limited has been found in other studies conducted in Malawi as well (Jenniskens *et al.*, 2012).

In the opinion of the author the priority given to PMTCT clients over CMAM may be explained by the publicity that PMTCT in particular have received in Malawi. Also, in the context of limited resources it is likely that health workers feel obliged to give priority to PMTCT because they receive test kits from donors that are specifically meant for PMTCT; whereas they receive no test kits specific for CMAM.

### **5.2.2 Shortage of staff skilled in HIV testing and counseling**

The other factor affecting uptake of HIV testing among CMAM clients is shortage of HTC counselors. The shortage of human resource in Malawi's public health system in general and HIV/AIDS sector in particular, is well documented (Palmer, D., 2006; McCoy, McPake & Mwapasa, 2008). The current study found that due to shortage in staffing, HTC counselors have an overload of work, as they also perform other duties required of them as health surveillance assistants. As such, either the counselors are away from the testing facility on other duties at the time clients are referred to them; or they simply cannot cope with the number of clients referred to them on a given day. This finding is supported by a prior study in Malawi by Makwiza *et al.* (2009) who also found shortage of HTC staff as impeding access of HIV testing. Studies in other countries also revealed similar findings (Sibanda *et al.*, 2012; Heunis *et al.*, 2011).

The literature and findings of this study are in agreement with the author's personal observation with regard to shortage and workloads of staff in Malawi's public health system as a whole. However, it is my opinion that the problem of staffing in Malawi's health system may be about numbers as much as inequitable distribution of staff between and within districts.

### **5.2.3 Lack of commitment among staff in referring children for HIV testing**

Another factor affecting uptake of HIV testing is the lack of commitment to and appreciation of the importance of referring all malnourished children to HTC, particularly in OTP and SFP. As a result of this some CMAM clients are not being referred to HTC in the first place and/or those not tested at entry are not followed up during subsequent visits. This was attributed to the finding that at the time staff were last trained in CMAM, about four years earlier, there was little, if any,

emphasis on referring children for HIV testing. The study recorded that indeed reporting tools with a provision for number of clients referred and tested are a recent (post-training) introduction. It is worth noting that apart from the obvious benefit of imparting skills on staff, training has indeed been found to be a factor in improving motivation of health workers to do their work (Manongi, Marchant & Bygbjerg, 2006), as the findings show. Inadequate training of health workers has been found, in other studies in Malawi, to be a key limiting factor in the utilization of health services in general (Lau, Muula, Dzingomvera, Horwits & Mirisi, 2008); just as studies in other countries found inadequate training of health workers as a factor specifically in low uptake of HIV testing (Simpson *et al.*, 1998; Bulterys *et al.*, 2004; van't Hoog *et al.*, 2005; Wang *et al.*, 2005; Homsy *et al.*, 2006; Nkonki *et al.*, 2007, as cited by Anand *et al.*, 2005).

Although lack of training may help to motivate CMAM staff, as the literature suggests above, it is my opinion that the lack of commitment and diligence among staff in referring children to HIV testing may also be explained by the generally low morale that the author has observed in Malawi's health system. The low morale in turn may have something to do with low remuneration in the country's civil service combined with the heavy workload of health workers as observed earlier.

The exception to this factor, i.e. lack of commitment, was the NRU where uptake of HIV testing was found to be 100%. The reasons behind this peculiarity with NRU were outside the scope of this study, but are worth further investigation. Suffice to point out the apparent difference that unlike OTP and SFP, children enrolled in NRU are typically in the most severe conditions of malnutrition, are fewer and are treated as inpatients; whereas those enrolled in OTP and SFP have less severe forms of malnutrition, are more numerous and are treated as outpatients. Based on these differences, it is my opinion that the critical medical conditions of NRU children give more impetus to staff to have them tested and the fact that the numbers are small and are inpatients makes it relatively easier to follow up on all of them and make sure they are tested.

#### **5.2.4 Inadequately trained staff**

Related to lack of commitment amongst staff, the study found lack of skills among CMAM staff in motivating clients to test. This may be attributable to the fact that CMAM staff, who are typically health surveillance assistants by cadre, are not trained in counseling. Neither does

training in CMAM include counseling. Indeed the study found that pre-HTC messages from CMAM staff play an important part in motivating clients to have children tested, as shown by the finding that acceptance of HIV testing increases with subsequent visits to CMAM clinics, which is where motivational messages are delivered. The finding in this regard is supported by a prior study conducted in Malawi by Fergusson *et al.* (2010) which found that NRU workers lacked specialized training in HIV counseling. Indeed, with the regard to care for malnourished children, other studies found that training of nurses improved their knowledge and the quality of care that they provided (Puoane *et al.*, 2006). Based on this finding, it my opinion that training may also improve knowledge among health care workers on the relationship between HIV and malnutrition and therefore of the importance of ensuring that malnourished children are tested. Nevertheless, although literature supports this study's finding that lack of training of CMAM staff inhibits their ability to refer clients to HIV testing, I think that this may also be attributed to low morale and high workload among health workers as noted earlier.

Other studies suggest that staff's inadequacies in counseling skills may be linked to their attitudes towards HIV clients which they found to being of empathy in some instances (Sadob *et al.*, 2006) and being discriminatory in others (Delobelle *et al.*, 2009). The author is inclined to doubt with this assertion, as according to this study's findings, in NRUs all children were successfully referred to HIV testing by the same cadre of staff who manage CMAM as a whole.

### **5.3 Limitations of the study**

A few limitations of this study deserve mention. First, the study may have suffered selection bias due to the small number of facilities studied; as such the findings may not be a reflection all government-run facilities in the district of Dowa. Nevertheless, considering that the setting in which CMAM is implemented in the district is similar as observed by the author, the findings should be a fair reflection of all government-run facilities in the district. This is in addition to the fact that CMAM and HTC are implemented based on the same guidelines and by staff trained under the same regime. The second limitation is that record keeping of children referred and tested of HIV was found to be poor and in most instances uptake of HIV testing was estimated by staff. This may render the percentage uptake of HIV testing that the study found (58%) to be inaccurate. Nevertheless, the finding that uptake is moderately low is similar to national data, as outlined in the 'problem statement'. Thirdly, the fact that the district under study was

purposively selected means that the findings of this study may not be generalized to other districts offering CMAM in Malawi. Nevertheless, findings of this study may have relevance in other rural districts due to the fact that the national average uptake of HIV testing in CMAM is similar to what was found in this study.

## **Chapter 6: CONCLUSIONS AND RECOMMENDATIONS**

The results of this study reveal four main factors that negatively affect the uptake of HIV testing amongst children enrolled in CMAM in Dowa district: (a) lack of resources for HIV testing, (b) shortage of staff skilled in HIV testing and counseling, (c) lack of commitment among staff in referring children for HIV testing; and (d) inadequately trained staff.

The supply of test kits to the district as a whole is intermittent. This partly reflects intermittence in supplies from national source at Ministry of Health; and partly due to logistical flaws on the part of the District Health Office in that there are inaccuracies in ordering of supplies from source. It is recommended that supply of test kits to the district be increased and sustained and that there be better coordination within health facilities so that orders of test kits should be commensurate to requirements. Also, where supplies are inadequate CMAM clients should receive due priority in testing.

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There is also lack of commitment on the part of staff in referring malnourished children to HIV testing; as such not all children enrolled in CMAM are referred. This lack of diligence is attributed to the fact that at the time of training the need for such testing received inadequate emphasis, but may also be attributed to low morale and high workload among health workers. Related to this is the fact that CMAM staff lack skills in motivating or counseling clients to accept HIV testing. In regard to both lack of commitment and lack of skills in motivating clients, it is recommended that refresher training in CMAM be conducted and that this training should include counseling of clients in the area of HIV. The training in counseling need not be as comprehensive as that provided to certified HTC counselors who do the actual testing.

Considering that non-acceptance of testing among women partly stems from fear of partners' reaction to a non-sanctioned HIV test result, it is recommended that efforts be made to promote couple-counseling and testing. Couple-counseling has been found to enhance emotional support

between partners (WHO, 2012) which would help parry fear of a partner's reaction as was found in this study; and was also recommended as a way of increasing uptake of HIV testing in studies in Ethiopia (Malaju & Alene, 2012), Zambia and Rwanda (Allen *et al.*, 2007) and Botswana (Kebaabetswe *et al.*, 2010).

Ultimately, the desired outcome is for a malnourished child to receive an HIV test. As the study found, there is an insufficient number of HTC counselors in Dowa district. Other than that, the counselors have to perform other duties required of them as health surveillance assistants. This has meant that counselors are either unavailable to test children referred from CMAM or are simply overwhelmed by workload. It is recommended that more counselors be deployed to Dowa district.

The findings of this study have a number of implications. Firstly, as a way forward, the Ministry of Health and its partners need to allocate more resources into training of more HTC counselors. Secondly, there should also be adequate and equal distribution of supplies of HIV test kits across all health programs in Dowa district. Thirdly, future training of health workers involved in CMAM needs to include other related aspects such as HIV counseling. Fourth, there is need for health policy makers to employ innovative models of HIV testing and counseling as a way of increasing uptake amongst CMAM clients. Lastly, more research is needed to investigate client-related factors responsible for the relatively low acceptance of HIV testing amongst caregivers of children enrolled in CMAM.

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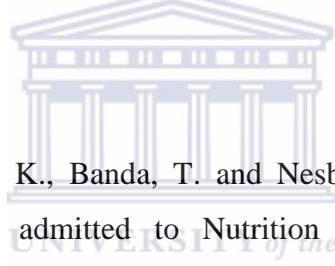
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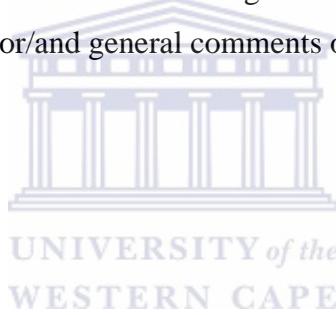
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## **APPENDICES:**

### **Appendix 1: Guide for in-depth interviews with CMAM and HTC focal person**

1. What challenges, if any, do you face in referring children for HIV testing in terms of
  - (a) Physical access to HIV testing facilities
  - (a) Resources?
  - (b) Attitude of staff?
  - (c) Availability for staff?
  - (d) Staff technical know-how?
2. What other challenges do you face in referring children for HIV testing?
3. In your opinion, how can referral to HIV testing be improved?
4. Do you have any questions or/and general comments on the subject under study



## Appendix 2: Consent Form



# UNIVERSITY OF THE WESTERN CAPE

Private Bag X 17, Bellville 7535, South Africa

Tel: +27 21-959 3563/2809, Fax: 27 21-959 2872

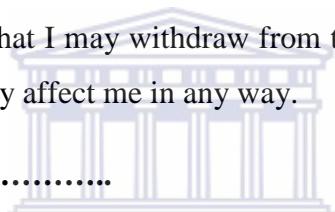
E-mail: [bvanwyk@uwc.ac.za](mailto:bvanwyk@uwc.ac.za) ; [lalexander@uwc.ac.za](mailto:lalexander@uwc.ac.za)



**Title of Research Project:** Uptake of HIV testing among acutely malnourished children in Dowa district of Malawi

The study has been described to me in language that I understand and I freely and voluntarily agree to participate. My questions about the study have been answered. I understand that my identity will not be disclosed and that I may withdraw from the study without giving a reason at any time and this will not negatively affect me in any way.

**Participant's name.....**



**Participant's signature.....**

**Witness.....**

**Date.....**

Should you have any questions regarding this study or wish to report any problems you have experienced related to the study, please contact the study coordinator:

**Study Coordinator's Name:** Dr Brian van Wyk

**University of the Western Cape**

**Private Bag X17, Belville 7535**

**Telephone:** 021 959 2173 **Cell:** 082 804 9055 **Fax:** +27 21 959 2872 **Email:** [bvanwyk@uwc.ac.za](mailto:bvanwyk@uwc.ac.za)

## **Appendix 3: Information Sheet**



# **UNIVERSITY OF THE WESTERN CAPE**

Private Bag X 17, Bellville 7535, South Africa

Tel: +27 21-959 3563/2809, Fax: 27 21-959 2872

E-mail: [bvanwyk@uwc.ac.za](mailto:bvanwyk@uwc.ac.za) ; [lalexander@uwc.ac.za](mailto:lalexander@uwc.ac.za)



**Project Title:** Uptake of HIV testing among acutely malnourished children in Dowa district of Malawi

### **What is this study about?**

This is a research project being conducted by Lusungu Chitete, a student at the University of the Western Cape. I am inviting you to participate in this research project because you are the focal person for CMAM/HTC at this health facility, which has been chosen randomly. The purpose of this research project is to understand factors that hinder or enable uptake of HIV testing amongst children enrolled in CMAM. The results from the study will provide information to Ministry of Health and its partners on how to improve uptake of HIV testing amongst malnourished children, so that children diagnosed with HIV can access the relevant treatment and care services.

### **What will I be asked to do if I agree to participate?**

You will be interviewed about your experiences with regard to CMAM and HIV testing. Specifically, I would like to learn from you what factors enable or hinder uptake of HIV amongst client you enroll in the CMAM in your health facility and how uptake can be improved

### **Would my participation in this study be kept confidential?**

I will do my best to keep your personal information confidential. To help protect your confidentiality your name will be kept confidential at all times and I shall keep all records of your participation, including a signed consent form which I will need from you should you agree to participate in the study, locked away at all times and will be destroyed after the study is completed. When I write a report about this research, your identity will be protected to the maximum extent possible.

### **What are the risks of this research?**

There are no known risks associated with participating in this research project.

### **What are the benefits of this research?**

This research is not designed to help you personally, but it is envisaged that the results of the study will help to inform Ministry of Health and its partners on how to improve uptake of HIV testing amongst CMAM clients in particular and enhance primary health care in general.

### **Do I have to be in this research and may I stop participating at any time?**

Your participation in this research is completely voluntary. You may choose not to take part at all. If you decide to participate in this research, you may stop participating at any time. If you decide not to participate in this study or if you stop participating at any time, you will not be penalized or lose any benefits to which you otherwise qualify.

### **Is any assistance available if I am negatively affected by participating in this study?**

There are no known negative effects that may result from your participation in this study



### **What if I have questions?**

This research is being conducted by Lusungu Chitete, a student at the University of the Western Cape. If you have any questions about the research study itself, please contact:

Lusungu Chitete

C/O World Food Programme

P.O. Box 30571, Lilongwe 3

Tel: (+265) 0774666

Cell: (+265) 888558185

Email: lusunguchitete@gmail.com

Should you have any questions regarding this study and your rights as a research participant or if you wish to report any problems you have experienced related to the study, please contact:

Head of Department: Prof Uta Lehmann, Director of the SOPH

Dean of the Faculty of Community and Health Sciences: Professor Hester Klopper

University of the Western Cape

Private Bag X17

Bellville 7535

This research has been approved by the University of the Western Cape's Senate Research Committee and Ethics Committee.



**Appendix 4: Consent Form (Translated into Chichewa)**



# UNIVERSITY OF THE WESTERN CAPE

Private Bag X 17, Bellville 7535, South Africa

Tel: +27 21-959 3563/2809, Fax: 27 21-959 2872

E-mail: [bvanwyk@uwc.ac.za](mailto:bvanwyk@uwc.ac.za) ; [lalexander@uwc.ac.za](mailto:lalexander@uwc.ac.za)



**Mutu wa Kafukufuku:** Kafukufuku wa momwe kuyezetsa kwa matenda a EDZI mwa ana onyentchera akuyendera m'Boma la Dowa

Ndalongosoledwa za kafukufukuyu komanso nditenga nawo mbali mwa ulufu wanga. Mafunso onse omwe ndinali nawo ayankhidwa. Dzina langa likhala la chinsinsi pa kafukufukuyu. Ndili ndi ufulu kusiya kutenga nawo mbali mosaopa kanthu.

**Dzina la wotenga nawo mbali:**.....

**Saini:**.....

**Mboni:** .....

**Tsiku:** .....



UNIVERSITY *of*  
WESTERN CAPE

Ngati mungakhale ndi mafunso kapena madandaulo pa kafukufukuyi, mukhoza kufunsa kwa:

**Dzina la woyang'anira kafukufuku:** Dr Brian van Wyk

University of the Western Cape

Private Bag X17, Belville 7535

**Telephone:** 021 959 2173 **Cell:** 082 804 9055 **Fax:** +27 21 959 2872 **Email:**

bvanwyk@uwc.ac.za

## Appendix 5: Information Sheet (Translated into Chichewa)



# UNIVERSITY OF THE WESTERN CAPE

Private Bag X 17, Bellville 7535, South Africa

Tel: +27 21-959 3563/2809, Fax: 27 21-959 2872

E-mail: [bvanwyk@uwc.ac.za](mailto:bvanwyk@uwc.ac.za) ; [lalexander@uwc.ac.za](mailto:lalexander@uwc.ac.za)



**Mutu wa Kafukufuku:** Kafukufuku wa momwe kuyezetsa kwa matenda a EDZI mwa ana onyentchera akuyendera m'Boma la Dowa

### Kafukufukuyi akukhuza nkhani yanji?

Kafukufukuyi akupangidwa ndi Lusungu Chitete, yemwe akupanga maphunziro ku sukulu ya ukachenjede ya Western Cape ya ku South Africa. Mwasankhidwa mosayang'ana nkhopo kuti mutenge nawo mbali pa kafukufukuyi inu monga woyang'anira pologalamu yochiza ana onyetchera pa chipatalachi. Cholinga cha kafukufukuyi ndikufufuza momwe ntchito yoyeza matenda a EDZI mwa ana onyentchera ikuyendela. Zotsatira za kafukufukuyi zithandiza Unduna wa Zamoyo kuti uyendetse bwino pologalamu yochiza ana onyentchera.

### Ndikavomera kutenga nawo mbali, ndifunsidwa mafunso anji?

Mufunsidwa zomwe mwaziona mu pologalamu yochiza ana onyentchera ndi momwe kuyeza matenda a EDZI mwa anawa kukuyendera. Makamaka, ndikufuna kudziwa kuti tingapange bwanji kuti ana onyentchera ambiri aziyzedwa matenda a EDZI.

### Kodi dzina langa lizaululika mokhudzana ndi kafukufukuyi?

Tjyesetsa kuti dzina lanu lisazaululike mokhudzana ndi kafukufukuyi. Mapepala onse omwe angakhale ndi dzina kapena saini yanu azasungidwa mwa chinsinsi. Polemba zotsatira za kafukufukuyi dzina lanu silizatchulidwapo.

### **Ndi choypa chanji chingandigwere potenga nawo mbari pa kafukufukuyi?**

Momwe tikudziwira palibwe choypa chilichonse chingakugwereni chifukwa chotenga nawo mbari pa kafukufukuyi.

### **Ndipindulapo chiyani potenga mbari pa kafukufukuyi?**

Inuyo simupindurapo chili chonse potenga mbari pa kafukufukuyi. Koma tili ndi chikhulupiliro kuti zotsatira zake za kafukufukuyi zizathandiza Unduna wa Zaumoyo kuti ana ambiri onyentchera aziyzedwa matenda a EDZI komanso kulandira chithandizo choyenera.

### **Ndili wokakamizidwa kutenga mbali pa kafukufukuyi?**

Mutenga nawo mbali pakafukufukuyi mwa ufulu wanu. Mukhoza kusiya ngati mungafune kutero. Ngati mungafune kusatenga nawo mbali kapena kusiya palibe choypa chili chonse chingakuchitikireni.



### **Choypa chitandichitikira potenga mbali pa kafukufukuyi ndingakadandaule kuti?**

Momwe tikudziwira palibe choypa chilichonse chingakugwereni chifukwa chotenga nawo mbari pa kafukufukuyi.

### **Ngati ndingakhale ndi mafunso, ndifunse ndani?**

Kafukufukuyi akupangidwa ndi Lusungu Chitete, yemwe akupanga maphunziro ndi sukulu ya ukachenjede ya Western Cape ya ku South Africa. Ngati mungakhale ndi mafunso pa kafukufukuyi mukhoza kufunsa:

Lusungu Chitete

C/O World Food Programme

P.O. Box 30571, Lilongwe 3

Tel: (+265) 0774666

Cell: (+265) 888558185

Email: lusunguchitete@gmail.com

Ngati mungakhale ndi mafunso kapena madandaulo pa kafukufukuyi, mukhoza kufunsa kwa:

Head of Department: Prof Uta Lehmann, Director of the SOPH

Dean of the Faculty of Community and Health Sciences: Professor Hester Klopper

University of the Western Cape

Private Bag X17

Bellville 7535

Kafukufukuyi wavomelezedwa ndi ndi komiti yoyang' anira za kafukufuku ya sukulu ya ukachenjede ya Western Cape ya ku South Africa.



**Appendix 6: Ethical Approval from National Health Sciences Research Committee**

RE: Protocol # 1129: Uptake of HIV testing among acutely malnourished children in Dowa district of Malawi

Dear Sir/Madam,

Lusungu Chilite University of Western Cape

The Secretary for Health and Population  
All Communications should be addressed to:  
e-mail: doccenter@malawi.net

Telephone: + 265 789 400 Facsimile: + 265 789 431

In reply please quote No. MED/4/36c

MALAWI  
LILONGWE 3  
P.O. BOX 30377  
MINISTRY OF HEALTH

4<sup>th</sup> February 2013

Thank you for the above titled proposal that you submitted to the National Health Sciences Research Committee (NHSRC) for review. Please be advised that the NHSRC has reviewed and **Approved** your application to conduct the above titled study.

- APPROVAL NUMBER : NHSRC # 1129
- APPROVAL DATE : 04/02/2013
- EXPIRATION DATE : This approval expires on 03/02/2014
- After this date, this project may only continue upon renewal. For purposes of renewal, a progress report on a standard form should be used on all correspondence, consent forms and documents as appropriate.

SERIOUS ADVERSE EVENT REPORTING: All serious problems having to do with subject safety must be reported to the National Health Sciences Research Committee within 10 working days using standard forms obtainable from the NHSRC Secretariat. All serious problems having to do with subject safety must be reported before implementation of any changes in the protocol (including changes in the consent documents). You may not use any other consent documents besides those approved by the NHSRC Secretariat.

MODIFICATIONS: Prior NHSRC approval using standard forms obtainable from the NHSRC Secretariat is required before implementing any changes in the protocol (including changes in the consent documents). You may not use any other consent documents besides those approved by the NHSRC Secretariat. On termination of a study, a report has to be submitted to the NHSRC using standard forms obtainable from the NHSRC Secretariat.

TERMINATION OF STUDY: Please contact the NHSRC on Telephone No. (01) 724118, 0999218630 or by e-mail on moh@gmail.com

OTHER: • Please be reminded to send in copies of your final research results for our records as well as for the Health Research Database.

Kind regards from the NHSRC Secretariat.

**FOR CHAIRMAN, NATIONAL HEALTH SCIENCES RESEARCH COMMITTEE**

Executive Committee: Dr. C. Alwanasambu (Chairman), Prof. Mfundo Bengo (Vice Chairman)  
Registered with the USA Office for Human Research Protections (OHRP) as an International IRB  
PROMOTING THE ETHICAL CONDUCT OF RESEARCH





**Appendix 8: CMAM Admission and Discharge Criteria (*Prior to being adapted to 2006 WHO child growth standards*)**

**NRU, OTP and SFP Admission Criteria:**

<b>NRU</b>	<b>OTP</b>	<b>SFP*</b>
<p><b>Children 6 months – 11 years</b></p> <p>W/H &lt;60% or Bilateral pitting oedema +++ or Marasmic Kwashiorkor (= W/H &lt; 70% or MUAC** &lt;11.0cm with any grade of oedema)</p> <p><b>OR</b></p> <p>W/H &lt;70% or MUAC** &lt;11cm or oedema + and ++ <u>with</u> any of the following complications:</p> <ul style="list-style-type: none"> <li>• Anorexia, no appetite</li> <li>• High fever</li> <li>• Hypothermia</li> <li>• Vomiting</li> <li>• Severe dehydration</li> <li>• Severe anaemia</li> <li>• Very weak, lethargic, unconscious, convulsions</li> <li>• Moderate to severe skin lesions</li> <li>• Difficult or fast breathing</li> </ul> <p><b>Special cases***</b> Children &gt;6 months weighing &lt;3 kg Infants &lt;6 months who meet criteria for admission to NRU</p>	<p><b>Children 6 months – 11 years</b></p> <p>W/H &lt;70% or bilateral pitting oedema + and ++ or MUAC** &lt;11cm</p> <p><b>AND</b></p> <ul style="list-style-type: none"> <li>• Appetite</li> <li>• Clinically well</li> <li>• Alert</li> </ul> <p><b>HIV positive children</b> <b>6months – 11 years</b></p> <p>W/H &lt; 80% or MUAC &lt; 12 cm</p>	<p><b>Children 6 months – 11 years</b></p> <p>W/H = 70-79.9% or MUAC** = 11-11.9cm and no bilateral pitting oedema</p> <p><b>AND</b></p> <ul style="list-style-type: none"> <li>• Appetite</li> <li>• Clinically well</li> <li>• Alert</li> </ul> <p><b>Pregnant &amp; lactating women</b></p> <p>MUAC &lt;22 cm</p>

\* Children with moderate acute malnutrition with complications should be referred for medical treatment

\*\* MUAC criteria for children apply only to those from 1 – 11 years of age

\*\*\* Special cases are treated using classic NRU protocols as described in the National Guidelines for Management of Severe Acute Malnutrition

**NRU discharge criteria:**

Category	Definition
Transfer to OTP	Appetite returned (eats at least 75% of the RUTF ration for at least 24 hrs) <b>and</b> medical condition resolved / stabilised (for chronic conditions) <b>and</b> bilateral pitting oedema subsiding
Cured	Reaches cured criteria for traditional NRU treatment , as described in the guidelines for Management of Severe Acute Malnutrition. This may include the following special cases: Infants < 6months Children > 6 months, weighing < 3kg Children who cannot tolerate RUTF Children under special medical treatment who cannot be treated as outpatients

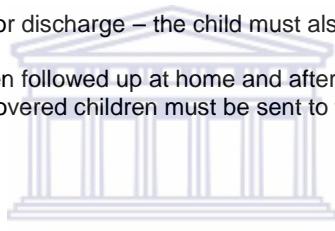
Defaulter	Absent from NRU for 2 consecutive days
Died	Died while in NRU

### OTP Discharge Criteria:

Category	Criteria
Cured *	W/H $\geq$ 80% (where there is SFP) or W/H $\geq$ 85% (in the absence of SFP) for two consecutive visits <b>and</b> MUAC* $\geq$ 11.0cm <b>and</b> No oedema for two consecutive visits (Minimum stay of 1 month for MUAC or W/H admissions or after NRU) (Minimum stay of 1 month for HIV-positive children admitted with a W/H 70-79% or MUAC 11-11.9cm)
Defaulted	Absent for 2 consecutive visits
Died	Died during time registered in OTP
Non-response**	Has not reached discharge criteria within 4 months. Link the child to other programmes e.g. IMCI, OVC, HTC, HBC, ART Clinics, targeted food distributions
Transferred to NRU	Condition has deteriorated and requires inpatient therapeutic care
Transfer to other OTP	Child has been transferred to another OTP

\* MUAC is NOT an independent criterion for discharge – the child must also satisfy weight-for-height and oedema criteria.

\*\* Before this time, children must have been followed up at home and after 3 months should have been referred for medical attention. Discharged, non-recovered children must be sent to the SFP, if available, and/or other support programmes



### SFP Discharge Criteria:

Category	Criteria
Cured *	Children 6 months to 11 years MUAC > 12.0 cm <b>AND</b> W/H > 85% for 2 consecutive visits 4 month stay if discharged from OTP/NRU Pregnant and lactating women MUAC > 22.5 cm for 2 consecutive visits
Defaulted	Absent for 2 consecutive visits
Died	Died during time registered in SFP
Non-response	Has not reached discharge criteria within 4 months.
Transferred to OTP	MUAC < 11.0 cm or W/H < 70% or bilateral pitting oedema MUAC < 12.0 cm or W/H < 80% AND HIV positive
Transfer to inpatient care	Child is transferred to inpatient care facilities

\* Moderately malnourished children with complications must be referred to a clinician or nurse for medical examination, and referral, if necessary, to hospital.