



COVERAGE ASSESSMENT

» SEMI-QUANTITATIVE EVALUATION OF ACCESS AND
COVERAGE

2015

Kiryandongo District, Uganda

November – December 2015

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This coverage survey was conducted with the collaboration and contributions of various stakeholders involved in managing and providing technical support to IMAM services in Kiryandongo refugee settlement. Action Against Hunger (ACF) Uganda mission would like to extend special appreciation to the following organizations for their support during the survey including data collection, analysis and preparing the recommendations:

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Abbreviations

ACF	Action Contre la Faim
ARI	Acute Respiratory Infection
CBSFP	Community Based Supplementary Feeding Programme
CHWs	Community Health Workers
CMN	Coverage Monitoring Network
CSB	Corn Soy Blend
DHO	District Health Office
DHT	District Health Team
FGD	Focus Group Discussion
FLA	Field Level Agreement
GAM	Global Acute Malnutrition
IMAM	Integrated Management of Acute Malnutrition
ITC	Inpatient Therapeutic Care
IYCF	Infant and Young Child Feeding
KDLG	Kiryandongo District Local Government
MAM	Moderate Acute Malnutrition
MoH	Ministry of Health
MUAC	Middle Upper Arm Circumference
NFI	Non Food Item
NGO	Non-Governmental Organisation
OPM	Office of the Prime Minister
OTC	Outpatient Therapeutic Care
RUTF	Ready to Use Therapeutic Food
SAM	Severe Acute Malnutrition
SFP	Supplementary Feeding Programme
SQUEAC	Semi Quantitative Evaluation of Access and Coverage
UNHCR	United Nations High Commission for Refugees
UNICEF	United Nations Children's Fund
VHT	Village Health Teams
WFP	World Food Programme

Contents

Table of Contents

Acknowledgements	2
Abbreviations	3
Contents	4
Executive Summary	6
1. Introduction	7
1.1 Context	7
1.2 The nutrition response	8
1.3 Objectives of the coverage assessment	10
1.4 Methodology	11
1.5 SQUEAC assessment design	12
1.6 Challenges/Limitations:	13
2. Stage 1 - Investigation Process	14
2.1 Quantitative Data	14
2.1.1 SFP Data	14
2.1.2 OTC data:	20
2.3 Qualitative Data	25
2.4 Concept Mapping	30
3. Hypothesis construction and testing	31
3.1 Hypotheses:	31
3.1.2 Small Area Survey	31
3.1.3 Results	32
3.1.4 Conclusion	33
4. Developing the Prior	34
4.1 Weighted Boosters and Barriers	34
4.2 Unweighted Boosters and Barriers	34
4.3 Concept Map Scoring	38
4.4 Histogram of belief	38
4.5 Calculation of the prior	38
5. Stage 3: Wide Area Survey	39
5.1 Sampling for Stage 3	39
5.1.2 House to House Screening	39
5.2 Results	40
5.3 Analysis of data collected in stage 3	42

7. Conclusion	43
8. Recommendations.....	45
Appendix a.....	49
Appendix b.....	50
Appendix c.....	51

Figures and tables

Figure 1: Map of Kiryandongo refugee settlement	7
Figure 1: The 3 stages in a SQUEAC assessment	12
Figure 3: Total admissions over time (SFP)	15
Figure 4: MUAC at admission (SFP)	16
Figure 5a: Defaulters over time (SFP)	17
Figure 6a: Length of stay in program defaulters (SFP)	18
Figure 6b: Length of stay in program cured (SFP)	18
Figure 7: Referral by source over period	19
Figure 8: Admissions over time (OTC)	20
Figure 9a: Defaulters over time (OTC)	21
Figure 9b: Total defaulters per health center (OTC)	12
Figure 11: MUAC at admission (OTC)	23
Figure 10: Discharges over time (OTC)	22
Figure 13: Length of stay defaulters – OTC	24
Figure 12: Length of stay cured – OTC	23
Figure 14: Referral sources – OTC	24
Figure 15: Source and Method codes	25
Figure 16: Concept map (OTC)	29
Figure 17: Histogram of belief	37
Figure 18: Bayes plot – Prior mode	38
Figure 19: Bayes Coverage Estimate	40
Figure 20: Barriers to OTC/SFP coverage	20
Table 1: Key Nutrition actors in Kiryandongo district	8
Table 2: IMAM services available and major populations reached	9
Table 3: Timelines for SFP implementation at the 5 sites	14
Table 4: Boosters and barriers to access	25
Table 5: Small area survey findings	31
Table 6: Weighted boosters	33
Table 7 Weighted barriers	35
Table 9: Wide area survey	39
Table 10: Recommendations	44

Executive Summary

This report presents the findings of the coverage assessment conducted by ACF in Kiryandongo refugee settlement in West Central Uganda in November 2015. Kiryandongo district is currently host to over 44,000 refugees from South Sudan. While the nutrition situation has stabilized from a critical emergency situation in 2014 the coverage of the current nutrition interventions implemented by ACF and other stakeholders in partnership with support from UNICEF, WFP and other humanitarian actors is not known. The assessment was therefore conducted to evaluate access and coverage of selective feeding programmes in the refugee settlements to better inform the programs access and coverage for improved program delivery.

The assessment was conducted based on the SQUEAC methodology, a low- resource method that uses a mix of quantitative and qualitative data to monitor nutrition programme performance, identify barriers to service access and uptake and evaluate coverage. The assessment covered 4 OTC and 5 SFP sites and included participants from both refugee and host communities.

The assessment found that the coverage of the Community Based Supplementary Feeding Program in Kiryandongo district was 50.3% (95%, CI = 37.6% - 63.2%). This is slightly above the Sphere standard of 50% for rural areas. The assessment did not establish the coverage for the Out Patient Therapeutic Feeding program due to insufficient number of SAM cases found during stage 3 wide area survey. Nevertheless, the qualitative stage of the survey highlighted key positive (boosters) and negative (barriers) that affect IMAM service delivery in the district.

The key positive factors (boosters) for program delivery were; presence of trained health personnel, regular availability of OTC and SFP supplies, good health seeking behavior, active case finding by VHTs and health workers at community and health facility level using both MUAC and Weight-for-height Z-scores, good perception of the program by communities and regular outreach activities which reduced distances to OTC and SFP sites.

The main negative factors (barriers) affecting coverage were long distance between communities and health facilities aggravated by poor referral between facilities, irregular/inconsistent outreach activities, low community awareness of acute malnutrition and the nutrition program particularly among the host communities, heavy staff workload due to increased admissions yet few staff available leading to long waiting times and affecting records management and language barriers due to inadequate translation services. These and other barriers also affected beneficiary retention, treatment outcomes and program performance as demonstrated by the high default rates across sites.

Nevertheless it is important to appreciate that the SFP program had only been implemented for less than 6 months in some locations. This could have impacted the findings of the assessment. However it is also an opportunity to utilize the findings of the coverage assessment to implement the recommendations early on during implementations to ensure greater impact of the OTC and SFP interventions at community level.

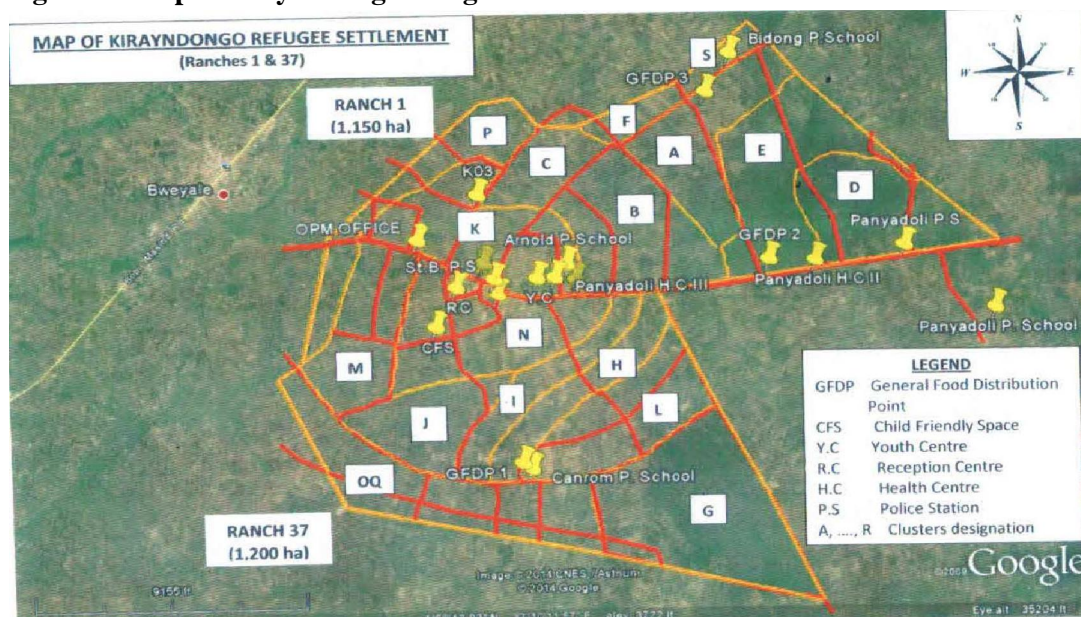
1. Introduction

1.1 Context

The Kiryandongo Refugee Settlement in Kiryandongo district, West Central Uganda is one of the oldest settlements in Uganda. Established in 1991 to host South Sudanese refugees fleeing fighting between the Sudan People's Liberation Army (SPLA) and the government forces, the settlement is currently home to more than 50,000 internally displaced Ugandans as well as refugees from neighbouring countries including South Sudan, Burundi, Democratic Republic of Congo, Rwanda and Kenya. The South Sudanese refugees comprise the biggest proportion of refugees; according to UNHCR operational statistics as at February 2016, the settlement was host to approximately 44,938 South Sudanese refugees displaced by conflict from South Sudan¹. While the South Sudanese make up the majority of the refugee population, because of the various origins of the current refugee population, indeed a variety of languages is used though Dinka and Arabic for the South Sudanese and Swahili for other nationalities dominate. Moreover, among the host communities, due to the location of the district at the centre of various ethnic groupings, a variety of languages including Luo, Nilotic and Bantu languages and dialects are spoken.

The settlement is divided into 3 major ranches 1, 18 and 37. Presently refugees are mainly resettled in ranches 1 and 37 while ranch 18 majorly hosts IDPs. The ranches are further divided into clusters with ranch 1 divided into 9 clusters (A, B, C, D, E, F, S, K and P). Ranch 18 is divided into 6 zones (A1, A2, B1, B2, C1 and C2). Figure 1 below shows the map of major ranches and clusters in the settlement.

Figure 1: Map of Kiryandongo refugee settlement



Source: UNHCR Kiryandongo

¹UNHCR Operational Statistics Updates for South Sudanese Emergency, February 2016, <http://data.unhcr.org/SouthSudan/settlement.php?id=168&country=229®ion=49>

The Department of Refugees in the Office of the Prime Minister and UNHCR jointly coordinate the response to address refugees' protection and assistance needs. Upon arrival at the settlement, asylum seekers are received at the transit centre where they are assessed and registered for assistance. Persons granted refugee status are thereafter allocated a plot of land per household as well as basic assistance including non-food items (NFIs), food and ration cards that entitle them to monthly food rations². Basic humanitarian assistance in the settlement is provided by UNHCR in partnership with various implementing and operating partners to provide services under shelter, non-food items, protection, health, food security, livelihoods and education. These services are often provided in partnership with the district local government technical departments. The government of Uganda encourages self – reliance among the refugee population and where land is available, plot allocation per household allows for cultivation of crops. In Kiryandongo, each household is allocated a plot of land with the average plot size in Kiryandongo at 50m by 100 m per household for both settlement and crop cultivation³.

1.2 The nutrition response

Following the influx of South Sudanese refugees in Uganda in December 2013, a food security and nutrition assessment was conducted by UNICEF in partnership with Makerere University School of Public Health (MaKSPH) to assess the nutrition status among the new refugees arriving in the settlement. The assessment found that among the new arrivals in Kiryandongo, Global Acute Malnutrition (GAM) levels at 24.1% (SAM – 5.3%)⁴ were critical, above WHO emergency thresholds (GAM $\geq$ 15%)⁵. With the aim of reducing malnutrition related mortality and morbidity, a nutrition response was led by various nutrition actors including World Food Program (WFP), United Nations Children's Fund (UNICEF), Action Against Hunger (ACF) and Concern Worldwide working in partnership with Kiryandongo District Local Government, Department of Health (DHO). With support from these partners, services for treatment of both severe acute malnutrition (SAM) and moderate acute malnutrition (MAM) were established at the various health facilities in line with the Integrated Management of Acute Malnutrition (IMAM) guidelines of the MOH Uganda. The table below indicates the key nutrition actors and their key roles in the refugee response.

Table 1: Key Nutrition actors in Kiryandongo district

Agency	Key role	Timeline
UNICEF	Technical support to the district and partners Provision of therapeutic feeds (RUTF, F75 & F100) and essential medicines for SAM management Provision of anthropometric equipment and reporting tools	Feb 2014 – to date

²http://opm.go.ug/assets/media/resources/11/The_Department_of_Refugees.pdf

³GoU, WFP & UNHCR, 2014, Uganda Joint Assessment Mission Report.

⁴Unicef, MaKSPH, Food Security and Nutrition Assessment among South Sudanese Refugees in Adjumani, Arua and Kiryandongo districts, New Caseload, March 2014.

⁵<http://data.unhcr.org/SouthSudan/documents.php?page=3&view=grid&Country%5B%5D=229&Type%5B%5D=4>

⁵ Geneva, World Health Organization, The management of nutrition in major emergencies, <http://www.who.int/topics/nutrition/publications/emergencies/en/>, 2000.

WFP	Provision of food commodities (CSB++, Super Cereal, Sugar, oil) for MAM management Provision of anthropometric equipment and reporting tools Technical support to the district and partners	Pre Feb 2014 – to date
Action Against Hunger	Training and on-job support to health workers on SAM and MAM outreaches Active case finding at community and health facility level Provision of anthropometric equipment and reporting tools Technical support to the district Complementary activities in IYCF, health outreach, hygiene promotion and HH diet diversification	March 2014 – to date
Concern Worldwide	Training and on-job support to health workers on SAM and MAM outreaches Active case finding at reception centre, community and health facility level Technical support to the district Complementary activities in IYCF and health outreach.	May 2014 – to date
Kiryandongo district local government - DHO	Provision of basic infrastructure, human resource and supplies for SAM and MAM management	N/A

As indicated by table 1, the key agencies directly implementing the nutrition response are ACF and Concern Worldwide who are supporting the District Health Office by strengthening the capacity of the district health system to provide care and management for acute malnutrition. This is done through training and on-job mentorship for health workers, provision of Information, Education and Communication materials, provision of equipment and supplies and support to monitoring, evaluation, supervision and reporting. In turn the district health workers provide treatment for the malnourished individuals. While the initial response focused on SAM management with only one (1) SFP site at Panyandoli HC III supported through Samaritan's Purse, with additional funding in April 2015 a WFP supported Community Based Supplementary Feeding Program (CBSFP) was scaled up to 5 (five) health facilities and implemented by ACF. Presently all IMAM interventions are available at district level; however the services available at a particular health facility depend on the level of the health facility and the implementing partner present. Moreover the population served per health facility (refugee/host community) depends on the geographical proximity to the refugee settlements. The table 2 below summarizes the IMAM interventions available and key populations served by health facility.

Table 2: IMAM services available and major populations reached at different health facilities

Health	IMAM services	Major population	Implementing agency
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facility/Ranches		served	
Panyandoli HC III	ITC, OTC, SFP	Refugees	ACF
Panyandoli HC II	OTC, SFP	Host community	ACF
Diika HC II	OTC	Host community	CWW
	SFP	Host community	ACF
Kiryandongo District Hospital	ITC	Host community	CWW
	OTC	Host community	ACF
	SFP	Host community	ACF
Reception centre*	OTC	Refugees	CWW
St Mary's Kigumba HC III, Kigumba HC III, Mpumwe HC II, Kitwara HC II, Apodorwa HC II, Kaduku HC II, Kirooko HC II, Tecwa HC II, Karungu HC III, Diima HC II, Katurikire HC III, Mutunda HC III, Yabweng HC III, Masindi Port HC III, Kichwabugingo HC II, Karuma HC II	OTC	Host community	CWW

Furthermore through bilateral agreements between the two agencies, community based interventions in the refugee settlements are shared between the 2 agencies with ACF implementing activities in Ranch 1 and 18 while Concern Worldwide implements activities in Ranch 37. At the time of the assessments plans were underway to harmonize the implementation of the community based volunteer referred to as village health teams (VHTs) approach among the different nutrition and health stakeholders.

1.3 Objectives of the coverage assessment

Following a full year of implementation of the nutrition response, a coverage assessment was proposed to determine the scope of coverage for both SAM and MAM treatment and the extent to which services are available and accessible to both the refugee and host communities. Conducting the coverage assessment would determine whether the current MAM and SAM treatment programs were achieving the objective of early case identification and treatment of SAM and MAM in the target population. In addition, the planned coverage assessment would foster current efforts by ministry of health to build capacity at national and district level to conduct coverage assessment to improve on monitoring and evaluation of

Integrated Management of Acute Malnutrition (IMAM) activities within the district. It is against this background that WFP in partnership with ACF and other implementing partners conducted a coverage assessment using SQUEAC methodology in the district of Kiryandongo.

Accordingly the overall objective of the assessment was:

To evaluate access and coverage of selective feeding programmes in refugee settlements in Kiryandongo district currently hosting South Sudanese refugees to better inform the programs access and coverage for improved program delivery.

The specific objectives of the assessment were:

1. To map out coverage of the OTC and SFP programs in the refugee catchment area using SQUEAC methodology
2. To identify factors affecting the uptake of OTC and SFP services in the refugee catchment area (barriers and boosters)
3. To develop specific recommendations based on survey outcomes to improve acceptance and coverage of the program
4. To build capacity of the District Health Teams and key nutrition partners in the district in coverage assessment using SQUEAC methodology.

1.4 Methodology

The assessment was conducted based on the SQUEAC methodology. The Semi-Quantitative Evaluation of Access and Coverage (SQUEAC) is a low- resource method that is used to monitor nutrition program performance and evaluate coverage. The SQUEAC method is used to monitor nutrition programme performance, identify barriers to service access and uptake and evaluate coverage. It uses a mix of quantitative (routine programme data and small and wide area surveys) and qualitative data (anecdotal information from various relevant respondents and key informants).

Initially it was proposed that the coverage assessment would only be conducted in the refugee settlements covering all 3 ranches 1, 18 and 37. This is because the SFP targeted the refugee population as the primary beneficiaries and the activities conducted in the host communities would have had minimal impact on coverage. Moreover the SFP had only been implemented for a short period (4 months) in the facilities located within the host communities,. However during stage 1, quantitative data analysis found that over 50% of admissions at all the health facilities were from host communities. Additionally the SFP implementation strategy was under adjustment to increase the reach to the host communities. Therefore it was important to understand the key factors influencing coverage amongst the host communities and as such the SQUEAC was conducted to cover both refugee settlements and host communities.

Initially planned for a period of 16 working days, the assessment was conducted over a period of 14 days as detailed in Appendix a.

The coverage assessment was conducted by ACF-Uganda mission in conjunction with the Ministry of Health, District health office and WFP. The recently trained MoH, ACF SQUEAC team with support from the ACF-USA HQ Technical advisor (*and overall external*

technical guidance by a consultant from the CMN) facilitated the exercise. A total of 12 persons participated in the activity; these included one facilitator (with external support from CMN), 1 MOH staff previously trained on the SQUEAC methodology and 10 enumerators from the district health staff and nutrition partners. The full list of participants is attached in Appendix b.

1.5 SQUEAC assessment design

A SQUEAC assessment is semi-quantitative, using a mixture of quantitative and qualitative data. Each type of data is collected throughout the assessment in the following three stages (See Figure 2). This culminates in a reliable estimation of coverage and a clear understanding of factors affecting coverage.

Figure 2: The 3 stages in a SQUEAC assessment



Stage 1: This involves both qualitative and quantitative evaluation of information to identify possible areas of high and low coverage. The data collected and analysed included;

- Quantitative routine programme monitoring data (e.g. trends in admission, exit, recovery, in-programme deaths, and defaulting) and data collected on beneficiary record cards (e.g. MUAC on admission).
- Existing contextual information: Agriculture, labour, disease, food-consumption, which may already be available from sources such as nutritional anthropometry surveys, agricultural assessments, livelihood surveys, food-security assessments.
- Qualitative data collected through informal group discussions and interviews.

Here, the information obtained is triangulated by source and method. In addition the following activities conducted during this stage include:

- Training of teams
- Preparation of interview/discussion groups/calendar/key informants
- Field validation of terminologies/calendar/key informants

Stage 2: This involves constructing and testing hypotheses using small studies, small surveys, and small-area surveys to confirm or deny hypotheses about programme coverage that arise from the analysis of programme and qualitative data.

Stage 3: Uses Bayesian techniques to estimate overall programme coverage with a small sample survey⁶. This is done through the following processes;

- Determining prior from constructed histogram of belief, and scored barriers and boosters (BBQ).
- Large-area survey (including two-stage sampling with door-to-door case finding conducted by VHTs).
- Estimation of point or period coverage using a Bayes calculator (combining prior and likelihood to determine posterior through conjugate analysis).

1.6Challenges/Limitations:

Data availability and quality – the data available at health facilities was mostly incomplete with key data on admission and discharge criteria missing from the records. This was further complicated by use of various reporting tools for instance some health facilities utilised patient cards while others used registers for recording patient data.

Time constraints: The assessment was scheduled to be conducted over a period of at least 18 days. However due to several other activities taking place during the same period the time available to conduct the survey was reduced to 14 days; this affected the data collection processes. This was further complicated by poor weather conditions –El Nino rains during the data collection period.

Beneficiary fatigue: Several assessments were conducted during the period leading up to the survey including the annual food security and nutrition survey and the quarterly weight-for-height assessment by the nutrition partners. By the time the SQUEAC was conducted, some beneficiaries were reluctant to have their children assessed and there were incidences of enumerators denied access to some of the children during the door-to-door screening process.

Methodology: The weight for height assessment was bulky and time consuming particularly during the door-to-door screening for MAM cases.

⁶Adapted from: Myatt.M et al, Semi-Quantitative Evaluation of Access and Coverage (SQUEAC)/ Simplified Lot Quality Assurance Sampling Evaluation of Access and Coverage (SLEAC) Technical Reference (<http://www.fantaproject.org/publications/squeac-sleac.shtml>)

2. Stage 1 - Investigation Process

2.1 Quantitative Data

The main purpose of this stage is to identify areas of probable low and high coverage and reasons for coverage failure using routine programme data, already available data, quantitative data that may be collected with little additional work and anecdotal data⁷. The key indicators analysed during this stage were: total admissions over time, total discharges over time, defaulters over time, length of stay before discharge and default (in weeks), MUAC at admission and MUAC at discharge for defaulters and cured and referral source. Key data that was not analysed included time and distance to travel and outreach activities.

2.1.1 SFP Data

During the quantitative stage data was analysed from 5 health facilities where ACF currently supports the Supplementary Feeding Program. These were Panyandoli HC III, Panyandoli Hills, Nyakadoti HC II, Kiryandongo General Hospital and Diika HC II. It is important to note that at some of these facilities, the CBSFP had actually been implemented for less than 6 months. Within the 5 facilities assessed there were differences in the timelines for the implementation of the SFP as shown in table 3 below:

Table 3: Timelines for SFP implementation at the 5 sites

	Pre-Sept 14	Sept - 14	Oct-14	Nov -14	Dec - 14	Jan -15	Feb - 15	Mar - 15	Apr - 15	May - 15	Jun - 15	Jul -15	Aug - 15	Sept - 15	Oct - 15
Panyandoli HC III															
Panyandoli Hills															
Nyakadoti HC II															
Kiryandongo Hospital															
Diika HC II															

The data from health facility records including the SFP registers, SFP client cards and SFP ration cards was reviewed. The findings are discussed in the sections below:

2.1.1.1 Admissions over time

Trends in admissions-over-time give program managers a quick insight as to whether the program is reaching the target population. It also acts as a gauge by which to assess the effects of changes or reforms made in the program (e.g. opening of new sites, recruitment of volunteers, initiation of outreach activities) or of events such as planting times, harvest time or CSB stock-outs.

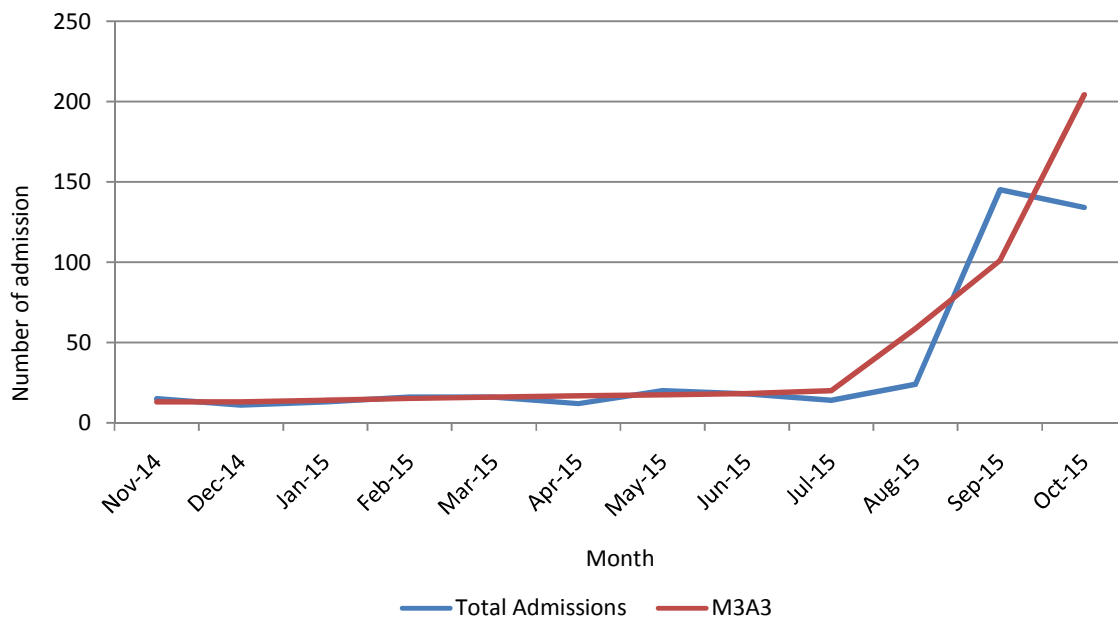
⁷ Mark Myatt, 2008, SQUEAC: Low resource method to evaluate access and coverage of programmes, Field Exchange 33, <http://www.ennonline.net/fex/33/low>

The data for admissions over time was computed from a review of the ACF Kiryandongo nutrition program database. The findings are summarized in figure 3a below. The blue line represents the actual data plot while the red line, M3A3, is where medians of sets of three successive data points (M3) have been taken. The results are then smoothed by taking the arithmetic means of sets of three successive smoothed data points (A3). The more times you apply a moving average, the more smoothing is applied to the data. This allows for a greater long term analysis of admissions. This way we can see variations over the data period without the abnormal fluctuations distorting the data set.

As shown in figure 3a below, admissions were stable and low (below 25 admissions per month) until July 2015 when a sharp rise is observed. This was mainly attributed to start of SFP program activities by ACF. This was followed by an increase in screening and admissions for MAM cases at Panyandoli HC III as well as establishment of 3 additional sites during the month of August. A further increase was also observed in September and this was attributed to initial community level screening based on both MUAC and Weight for height which was conducted in the refugee settlements. This resulted in an increase in the admissions particularly in Panyandoli HC III and Panyandoli Hills.

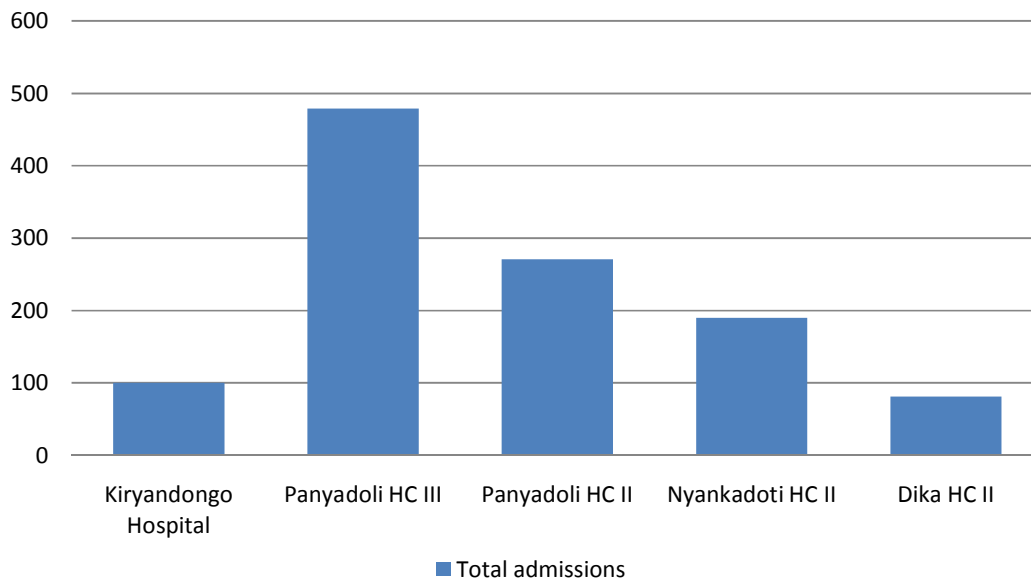
Although a seasonal calendar for the program location was developed (section 2.1.2.1), it was not possible to analyse for seasonal trend in admissions as full scale implementation of the SFP had been implemented for less than a year.

Figure 3a: Total admissions over time (SFP)



Of the 5 health facilities, Panyandoli HC III had the highest number of admissions while Diika HC II had the lowest overall. This was mainly because the health facility had been providing SFP services for longer than all the rest. However even after the establishment of the other 4 SFP sites, admissions in Panyandoli HC III remained higher than other 4 sites.

Figure 3b: Total admissions per health facility (SFP)



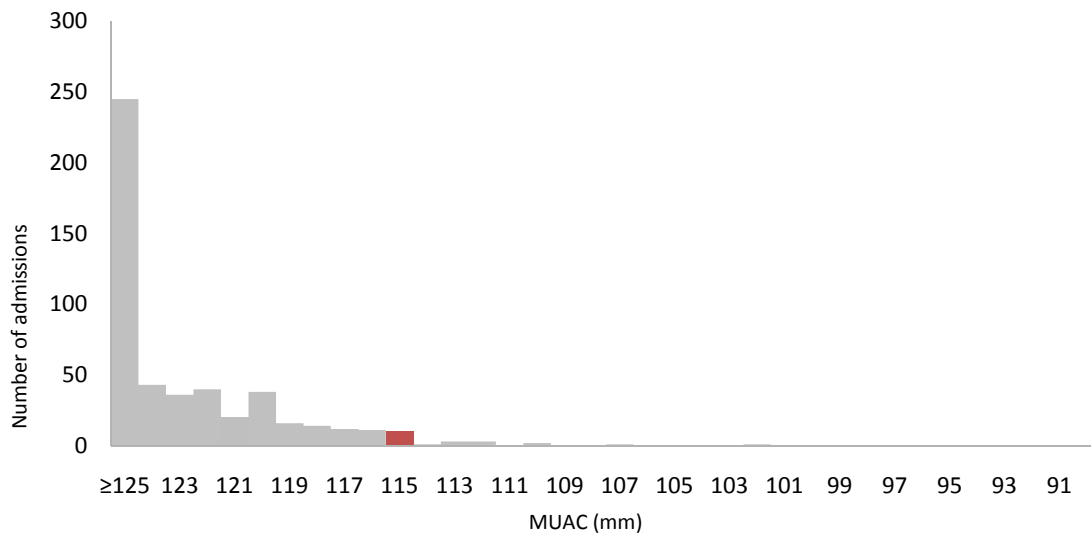
2.1.1.2 MUAC on admission

The MUAC at admission measures timeliness of admissions. This measure assesses the effectiveness and effectiveness of active case finding at community level. It gives a measure of whether the program is able to identify and refer acutely malnourished children as early as possible and/or whether caregivers of referred children are able to access the treatment services timely.

The data on MUAC at admissions was obtained through a review of the SFP registers and client cards at the 5 facilities. Due to the short duration of implementation of the SFP, all admissions were included in the analysis. However it was observed that many records particularly in the register didn't include the data on MUAC at admissions as the registers used didn't have a provision for recording the measurement. While records in the cards had provision for this information, it was observed that the cards were not often used by the health workers and even when they were used, the records were not kept well. Nevertheless data for MUAC at admissions was available for 496 patients and this was used for the trend analysis

The MUAC admission criteria to an SFP programme is $\geq 115\text{mm}$ and $< 125\text{mm}$. However the analysis found that there were many children (49%) in the program with the MUAC greater than 125mm; this was because these children had been admitted to the SFP based on the weight for height Z-score criteria (< -2 WHZ > -3). For those cases admitted based on MUAC criteria, majority were admitted closer to the admission criteria (125mm). This indicates the efficiency of the active case finding at community level through the VHT system.

Figure 4: MUAC at admission (SFP)

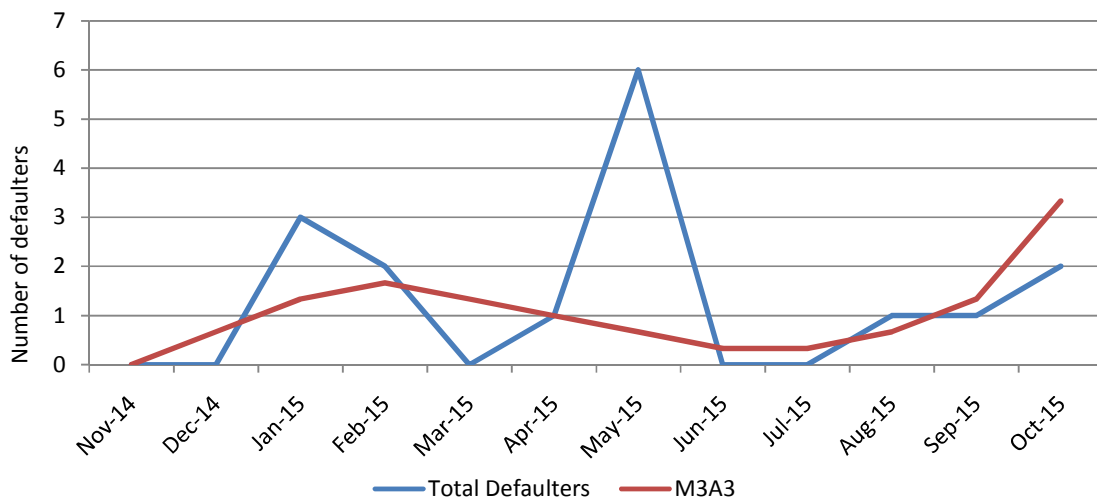


2.1.1.3 Defaulting

The trend of defaulters over time is one of the measures of a program's ability to retain children for treatment until fully recovered. This measure gives an indication of specific seasons or periods in which children tend to default and provides insight into the possible seasonal or event-related reasons for defaulting.

The defaulters data was analyzed from the ACF Kiryandongo Nutrition program database. As indicated in figure 5 below; the peak in defaulting was observed during February and March and in September 2015. Analysis of this trend against the seasonal calendar (Appendix b) suggests a relationship between the increase in defaulters and the start of the planting seasons in Kiryandongo. However the trend should be interpreted with caution due to the short period of SFP implementation at 4 of the facilities at the time of the assessment and poor records management at health facilities where some defaulters were recorded as cured cases with a longer stay in the program.

Figure 5: Defaulters over time (SFP)



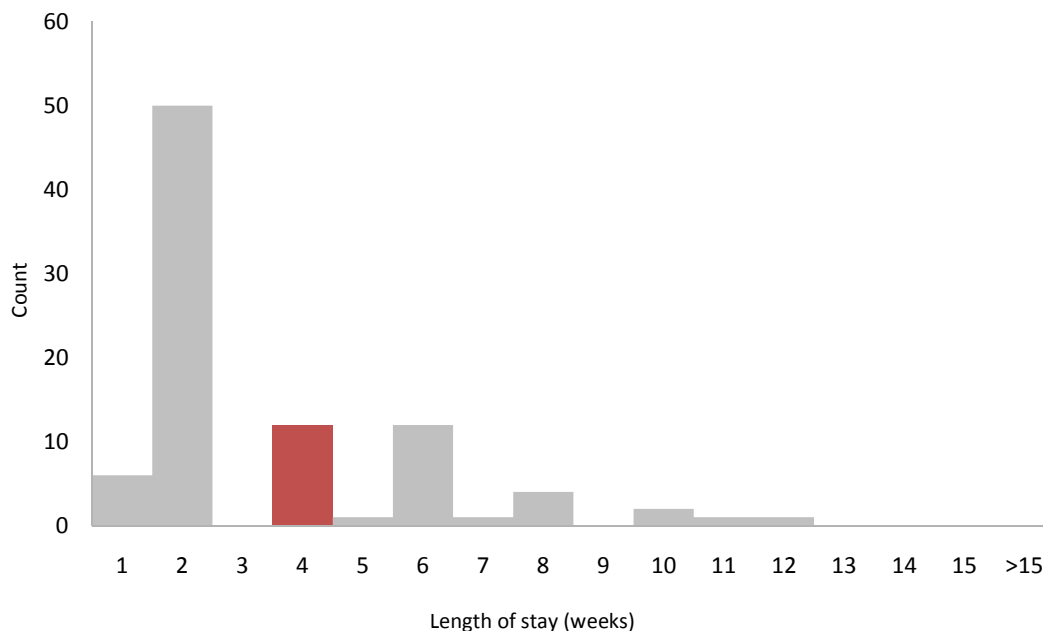
2.1.1.4 Length of stay

The length of stay was analysed for both children exited as cured and those exited as defaulted. Although the IMAM guidelines for Uganda⁸ do not state the expected length of stay in program, a length of stay greater than 90 days (12 weeks) in the SFP is considered non respondent and is discharged as such. Among cases existed as defaulters, the length of stay distinguishes an early defaulter (i.e. defaults within 4 weeks from admission) from a late defaulter (i.e. defaults after 4 weeks from admission). Early defaulting is an issue because the less time a child is in the programme, the less time they will have had to recover and the more malnourished they will be. A program with a high number of defaults after only one or two visits has a serious defaulting problem.

The analysis for this indicator was significantly affected by the poor records management at the health facilities, particularly the incompleteness of patient records which made it difficult to determine whether a child had been discharged as cured or defaulted. Furthermore since the program had been in existence for only 4 months at 4 of the facilities, some of patients had not attained discharge criteria. As such only 219 records out of the 465 recorded exits were included in the analysis.

As shown in figure 6a below, among those discharged as defaulters, there was a significant number of early defaulters particularly at 2 weeks. This trend was assessed further during the qualitative stage.

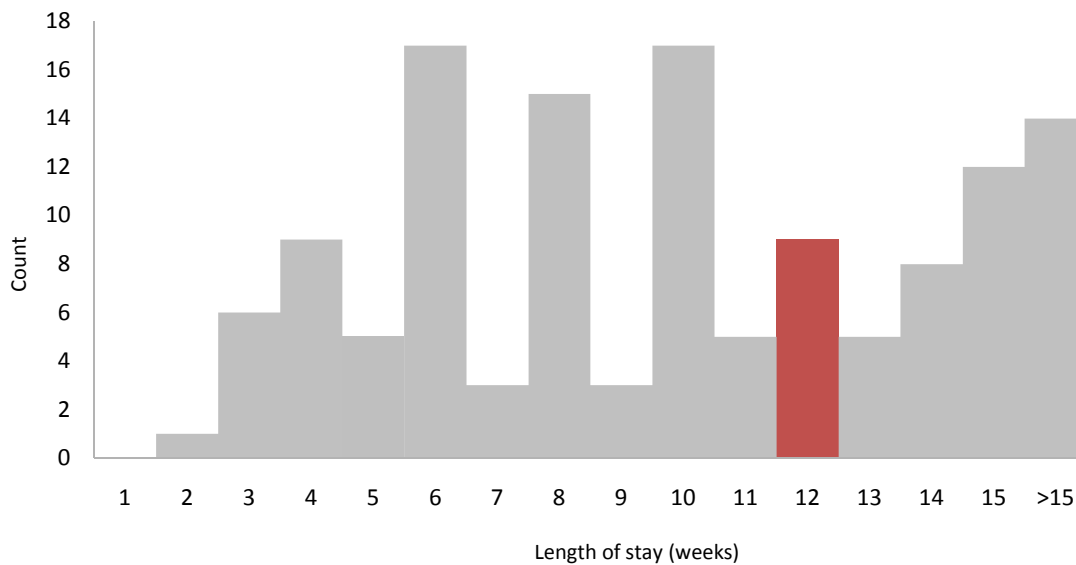
Figure 6a: Length of stay in program defaulters (SFP)



Among those discharged as cured (figure b), over 30% had been discharged after 12 weeks. This is despite the high early enrolment to the program (as observed from the MUAC at admissions data).

⁸ Ministry of Health Uganda, Integrated Management of Acute Malnutrition Guidelines, http://www.unicef.org/uganda/IMAM_Guidelines_final_version.pdf, December 2010

Figure 6a: Length of stay in program cured (SFP)

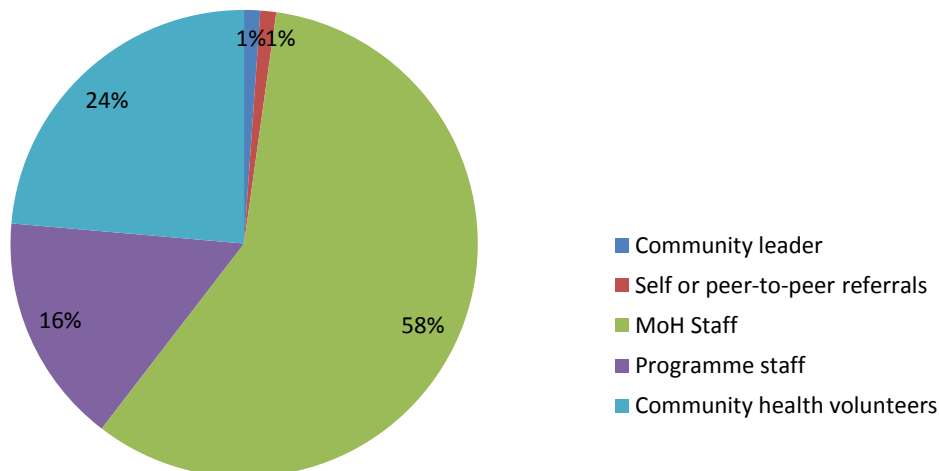


2.1.1.5 Referral by Source:

Data on referral source provides insight to the evolution of a program's case finding and indirectly assesses the performance of the program's outreach workers. In a program that has good community mobilization and awareness raising, it can be expected that the predominant source of referral will be from outreach workers, and then slowly evolve into more self-referrals later on in programme implementation.

As indicated in figure 7 below, majority of referrals in the program were done by the health workers at health facilities (MOH staff) at the outpatient department (OPD). However it was observed that referrals made by community health workers here known as Village Health Teams (VHTs) were not recorded accurately and referral slips were not kept at the health facility. As such it is possible that some of the cases received at OPD were initially referred from the community by the VHTs. There were very few self-referrals which indicates a lack of awareness of malnutrition and the program at community level.

Figure 7: Referral by source over period



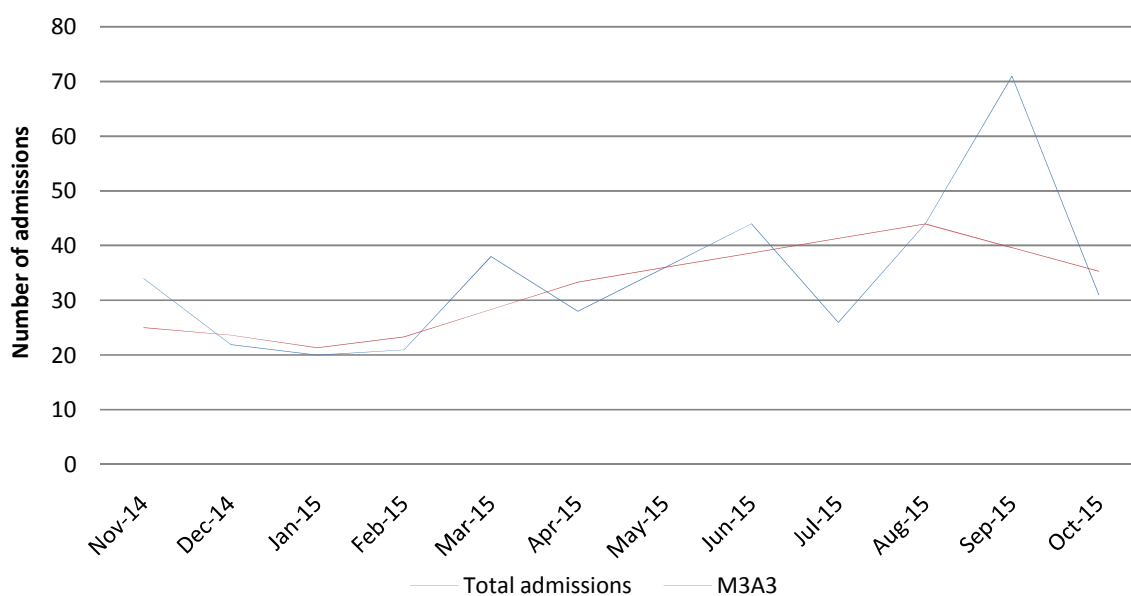
2.1.2 OTC data

During the analysis of OTC data, only data from 4 OTC sites supported by ACF was included in the analysis. The four (4) sites were Panyandoli HC III, Panyandoli Hills, Nyakadoti HC II and Kiryandongo General Hospital⁹. All the 4 sites had been functional for over one year however only data and records for the period November 2014 – October 2015 are included in the analysis. For the assessment the data from health facility records including the OTC registers, OTC client cards and OTC ration cards was reviewed. The findings are discussed in the sections below:

2.1.2.1 Admissions over time

As indicated in figure 8 below, the trend in admissions over time was stable between November 2014 and February 2015, an increase in admissions was observed in the period starting in March and continued up to August. Thereafter the number of admissions started to reduce gradually. When the admissions trend was analysed in comparison with the seasonal calendar, it was observed that admissions had a significant relationship with the occurrence of common childhood illness; as the occurrence of malaria, diarrhoea and ARIs increased the admissions also increased. Similarly both admissions and common childhood illnesses started to decline in August. This also correlates with the rainfall patterns in the area as childhood illnesses have been reported to increase during the rain seasons as a result of inadequate hygiene and sanitation practices as household level.

Figure 8: Admissions over time (OTC)



Seasonal Calendar													
		Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct
Diseases	Malaria	III					I	III	II	I	II	I	I
	ARI	III					I	III	II	I	I	I	I
	Acute diarrhoea	III					I	III	II	I		II	II

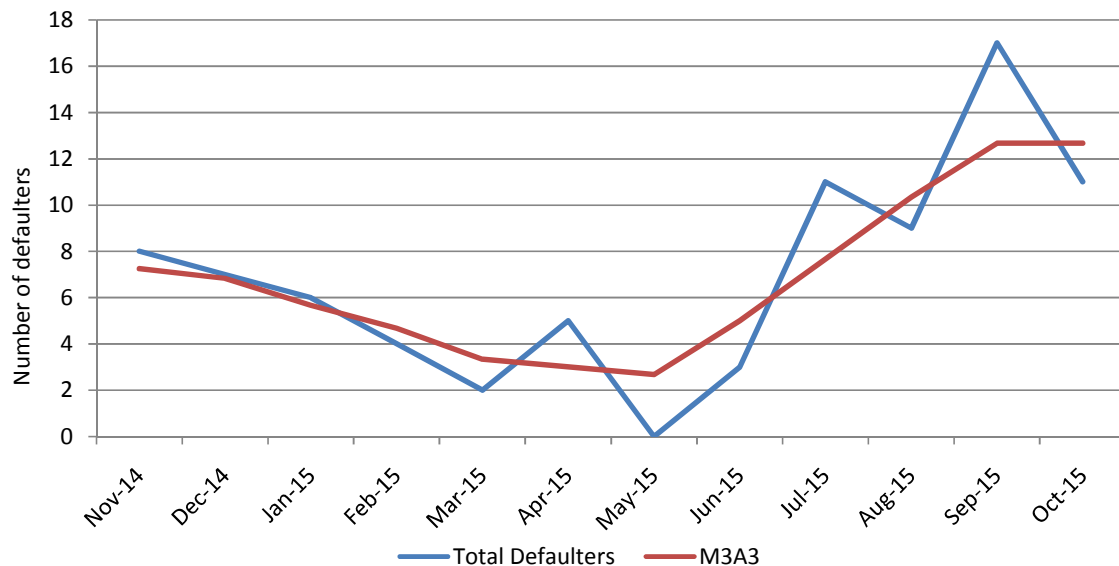
⁹ There exists an OTC site supported by Concern Worldwide at Diika HC II, however it wasn't included in the analysis due to difficulties with accessing the patient records.

Crops/ Produce	Maize		II	II						I	I		
	Cassava	II					I	I	I	I	I	I	II
	Beans	I									I	I	I
	Groundnuts			II					II	II	I	I	I
Staple food	Maize	II	III	III						III	III	III	II
Food availability	Food availability	II	II	III	II	I	I	I	I	II	II	III	II
Female labor demand	Garden activities	II	II	I	I	II	III	III	III	II	II	II	III
Male labor demand	Garden activities	II	I			II	III	III	II	II	II	III	III
Climate	Rainfall	II				I	II	III	II			II	III
	Temperature		II	III	III					I	II	I	

2.1.2.2 Defaulters over time

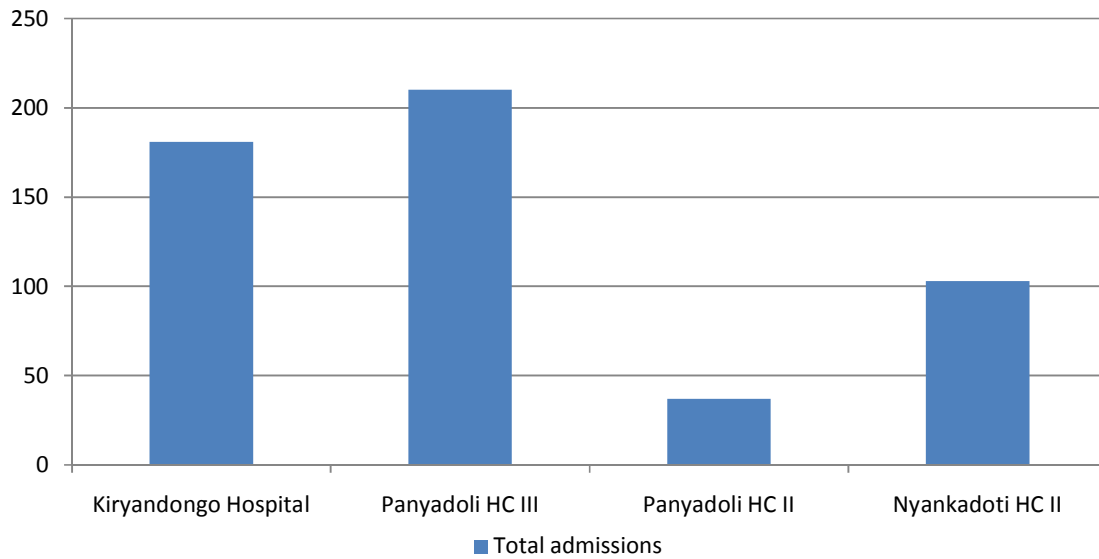
The defaulters data was analysed for total number of defaulters over time and defaulter rates by facility. As indicated in the figure 9a below, the number of defaulters in the OTC program declined in the period between November and March after which it started to increase steadily between May and September. When compared with the seasonal calendar during this period, there is an increase in the female labour demand related to agriculture activities. It is therefore likely that in Kiryandongo district, the maternal workload had a high influence on defaulter rates.

Figure 9a: Defaulters over time (OTC)



A comparison of the defaulter data between facilities indicated that Panyandoli HC III had the highest number of defaulters (figure 9b); however this possibly due to the fact that it also has the highest number of admissions. In regards to the defaulter rates per health facility (figure 9c) it was observed that Kiryandongo General Hospital had the highest defaulter rates. This was due to the distance travelled by some of beneficiaries to the facility particularly being the main referral facility for the host community. This is exacerbated by a poor referral system between facilities that doesn't support referral of beneficiaries to their closest OTC sites.

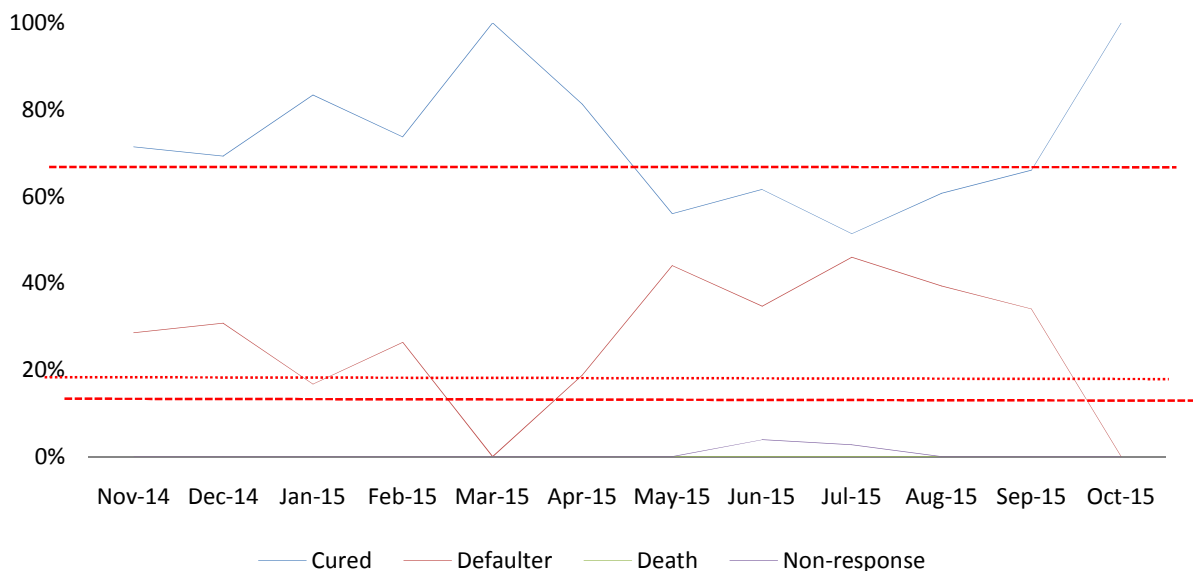
Figure 9b: Total defaulters per health center (OTC)



2.1.2.3 Discharge outcome

Discharge outcomes include the cure rate, defaulter rate and non-response rate. They were analysed for conformity to the Sphere standards for OTC programmes. The Sphere Project sets the minimum standards for the discharge outcomes. Cure rates should be higher than 75% while defaulter rates should be less than 15% and death rates should be less than 10%. In an effective program, death rates, non-response rates and defaulter rates should be kept as low as possible so as to get cure rates as high as possible. To analyze the discharge outcomes, the data was analyzed from the ACF Kiryandongo nutrition evolution file. The findings are summarized in figure 10 below:

Figure 10: Discharges over time (OTC)



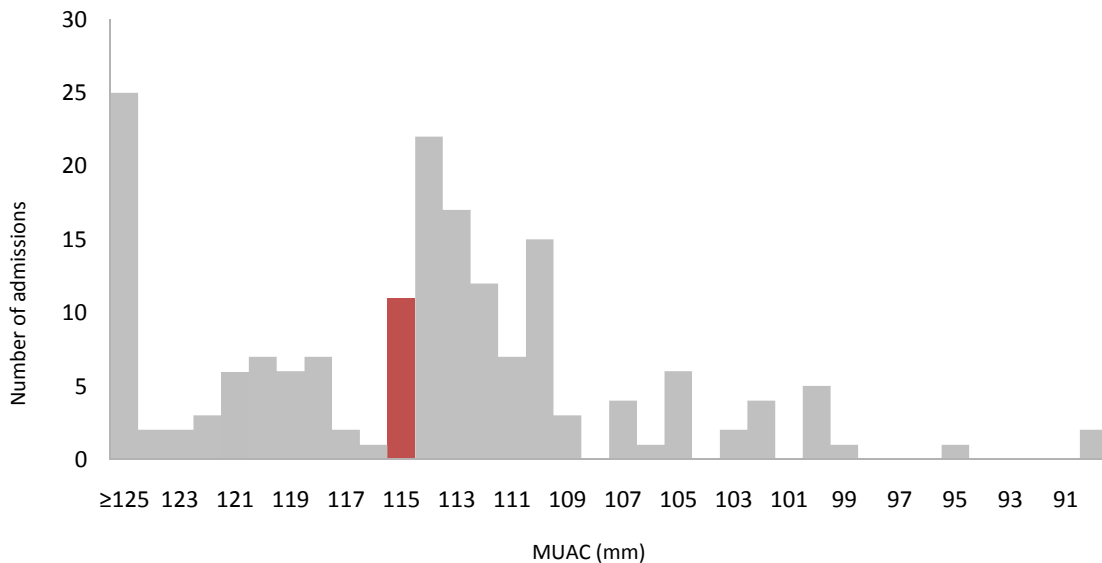
It was observed that apart from the months of March and October, the program performance indicators for the OTC programme were out of line with Sphere standards. The defaulter rate particularly was above the Sphere threshold (< 15%) for most of the year but worse in the period between May and September. As previously suggested, this could relate to the increase in the demand for female labour.

2.1.2.4 MUAC at admission

The MUAC admission criteria for OTC programs is MUAC less than 115mm. The data was collected from the OTC registers, OTC patient cards and ration cards where available. As reported earlier the MUAC was not always recorded as there is no allocation for this measure on the current data collection tools. The data analysed included 174 patient records.

As shown in figure 12 below, majority of the patients admitted to the OTC program on the basis of MUAC criteria were admitted closer to the 115mm cut off. This is indicative of a good system of active case finding and referral on the program. It was also observed that a significant proportion (41%) of the beneficiaries in the OTC had MUAC greater than 115mm; a further analysis found that these had been admitted to the program based on the weight for height admission criteria.

Figure 11: MUAC at admission (OTC)

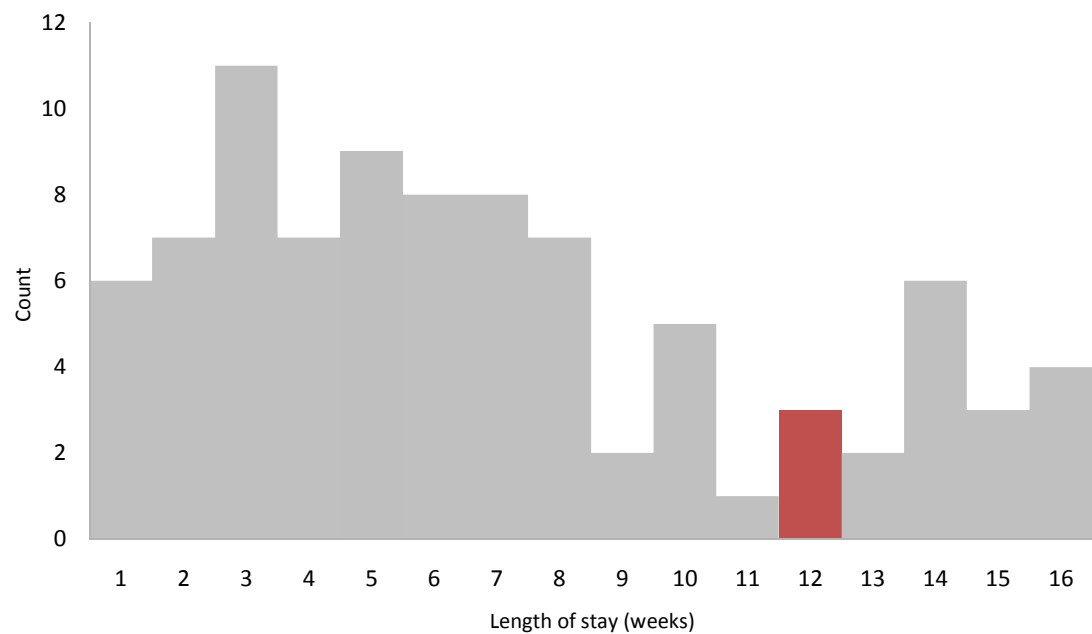


2.1.2.5 Length of stay in the program

The length of stay in the program was analysed for children discharged as cured and those discharged as defaulters.

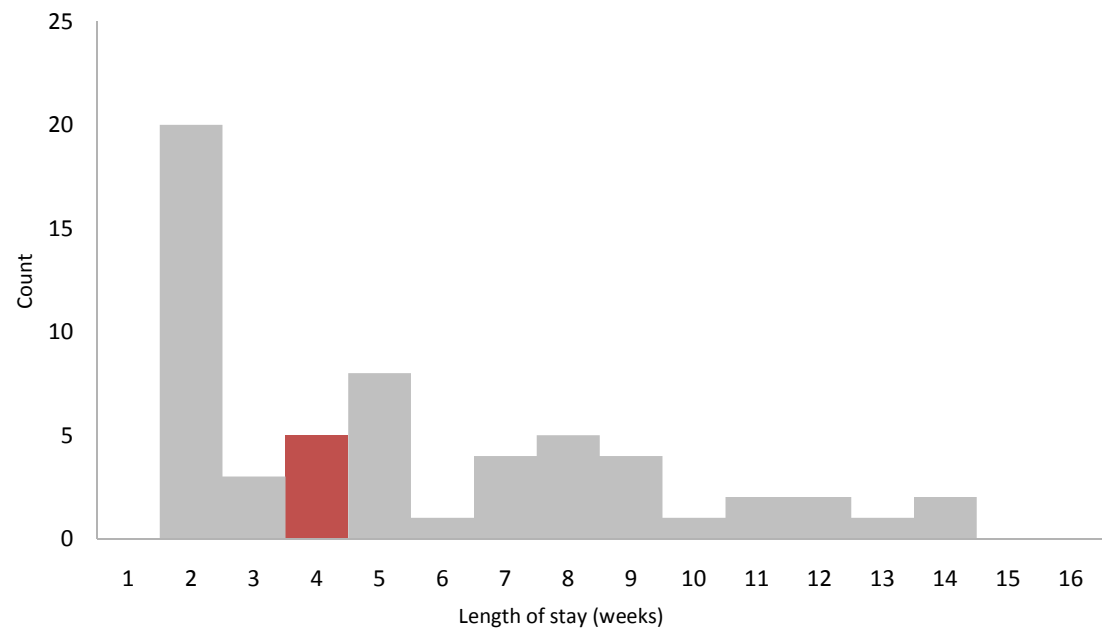
According to the IMAM guidelines for Uganda, the average length of stay in OTC is 60 days (8 weeks). The analysis found that while there were many early exits from the program, there were also children who stayed longer than 12 weeks in the program; these accounted for 16% of the discharges. This was attributed mainly to poor records management whereby patient information in registers was not updated as the scheduled clinic days. Additionally there were also cases of returning defaulters who were not recorded accurately by the health personnel.

Figure 12: Length of stay cured – OTC



It was observed that there was a higher number of children defaulting after 2 weeks on the program. It was suggested that this was mainly attributed to the distance between outreach posts and health facilities, whereby children identified and recruited to the program during outreach visits were unable to access follow up services in OTC due to the long distance between outreach sites and OTC. This was aggravated by the irregular outreaches services particularly in the host communities. It was not possible to assess the distance between outreach posts and the health facilities due to inadequate records; however distance as a potential barrier to coverage was assessed further during the qualitative stage.

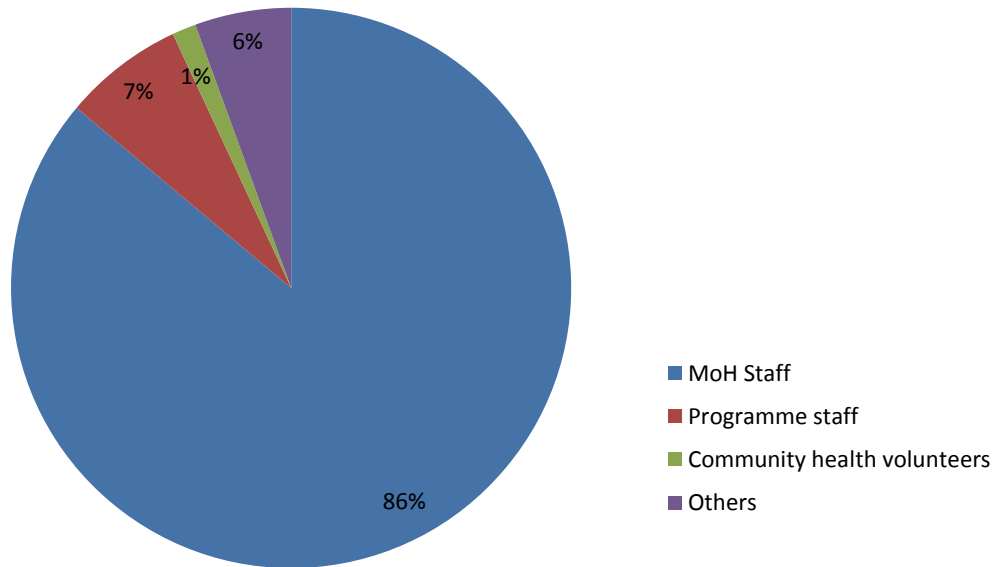
Figure 13: Length of stay defaulters - OTC



2.1.2.6 Referral source

The referral source is an indicator of active case finding at community level as well as community mobilisation and awareness of the treatment program. During the analysis it was observed that referral data was not accurately recorded and referral notes/slips were attached to patient records. It was therefore not easy to ascertain the referral pathway between the community and OTC sites.

Figure 14: Referral sources – OTC



As observed in the SFP program data, the main sources of referrals to the OTC were health workers (MOH staff) at the OPDs. This information should however be interpreted with caution as it is possible that the primary point of referral could have been a VHT or a self referral to the OPD.

2.3 Qualitative Data

Qualitative data was collected through focus group discussions, individual semi-structured interviews, informal interviews and observational studies. Interview and focus group guides that had been adapted from CMN resources¹⁰ were used, and these were adapted to the local context. The main themes investigated were as follows:

- Aetiology and terminologies of SAM and MAM
- Awareness of SFP and OTC programmes
- Perceptions and opinions of SFP and OTC programmes
- Pathways to treatment
- Case finding volunteer activity
- Reasons for covered and uncovered cases

The key principles of **triangulation by source and method** and **sampling to redundancy** were followed.

¹⁰<http://www.coverage-monitoring.org/training-centre/>

Data was collected through identified key informants and sampled across the refugee settlement and 5 health facilities where the OTC/SFP sites were located. A total of 10 focus group discussions, 28 key informant interviews and 6 informal interviews with 144 subjects were conducted during the qualitative data collection stage (see appendix 6).

The BBQ approach was used to organise data. At the end of each day of qualitative data collection, the team returned to base to discuss findings. These were identified and listed as either boosters or barriers to coverage for SFP, OTC or both programmes, with questions arising incorporated into the next day’s data collection. Data collection continued until sampling to redundancy was achieved, i.e. no new data was collected.

Figure 15 shows the sources of qualitative data collection and the methods used to obtain this information.

A total of 50 boosters and 49 barriers to access were identified during the qualitative research. These were then condensed based on relationship and pathways of effect to coverage until ultimately 9 barriers and 12 boosters were identified. These boosters and barriers apply to both SFP and OTC, considering the integrated nature of the programmes. These are listed in 4 below with an explanation for each and indication of the sources from which the finding was made.

Figure 15: Source and Method codes

<u>Sources</u>
1. Carers of beneficiaries in the program
2. Health workers
3. Community leaders
4. VHTs
5. Support staff
6. Community members - women
7. Community members - men
8. Carers of children not in the program
9. NGO staff
10. District Health Team
11. Teachers
12. Religious leaders
13. Herbalists/TBAs/ Traditional healers
14. Children
<u>Methods</u>
a. Informal interviews
b. Focus Group discussions
c. In-depth interviews
d. Observation

Table 4: Boosters and barriers to access

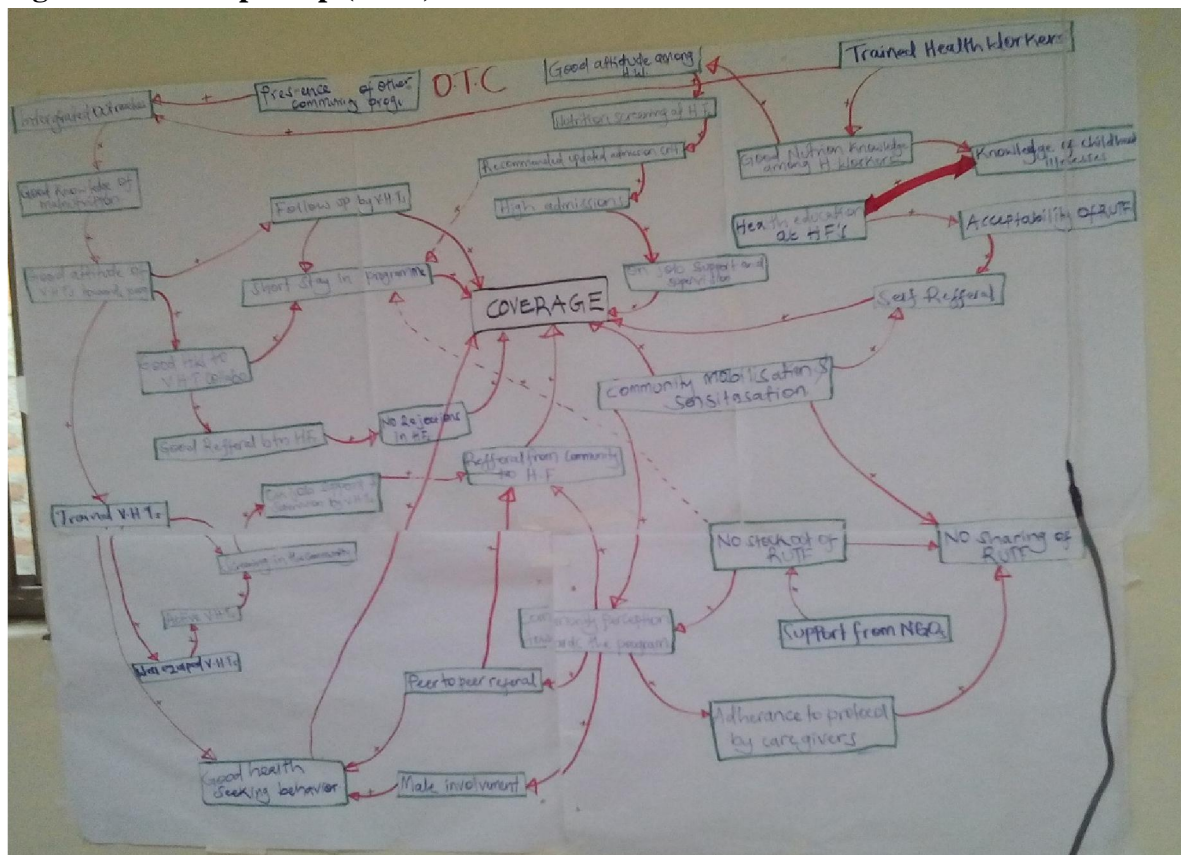
	Booster/Barriers	OTC or SFP	Explanation	Sources and Triangulation
Boosters				
1	Good knowledge of recommended nutrition practices and utilization of RUTF and SFP rations.	OTC and SFP	Health education sessions were conducted at health facility and community level by VHTs, Lead mothers and Health workers. To reinforce key nutrition messages nutrition education included practical food demonstrations on the utilization of the food rations distributed particularly in SFP	Health workers, Carers of beneficiaries in the program, Teachers, Carers of children not in the program, Community members (both men and women), Religious leaders, VHTs, Community leaders, Teachers, NGO staff
2	Active case finding at health facility level and community level	OTC and SFP	A system of active case finding through nutrition screening for children and PLW at key contact points in OPD (YCC, EPI, ART and ANC) clinics and during outreach clinics improved early case identification and referral. Screening was done by both VHTs and HWs.	MUAC at admissions data (both OTC and SFP), HWs, Observed by the SQUEAC teams, teachers, Carers of beneficiaries in the program, NGO staff, VHTs, community leaders, religious leaders, community members (women)
3	Good knowledge of IMAM protocols amongst health workers	OTC and SFP	Health workers had been trained on IMAM protocol for ITC, OTC and SFP. They also reported that they received on-job support from NGO staff which helped them to implement the protocol. This improved their confidence and attitude when offering the nutrition care.	HWs, community leaders, NGO staff, Carers of beneficiaries in the program, District Health Team, Carers of children not in program, community members (women)
4	Good health seeking behaviour	OTC and SFP	Children identified with acute malnutrition at community level reached the OTC/SFP sites for treatment. There was also knowledge of common childhood illness (ARIs, diarrhoea, malaria) at community level.	Health workers, VHTs, Community members (women and men), Carers of beneficiaries in the program, Carers of children not in the program, children
5	Regular availability of OTC and SFP supplies	OTC and SFP	There were no stock out of RUTF in the district in the year preceding the assessment while although stock out of sugar and oil had been experienced in the SFP, the pipeline for SuperCereal had been stable. This ensured that complete rations were given at all times and improved the recovery process.	Program records, HWs, VHTs, carers of beneficiaries in program, community leaders, NGOs staff, district health team
6	Community awareness of malnutrition (refugees)	OTC and SFP	Community had good knowledge of malnutrition , there were peer referrals to OTC/SFP sites and peer-to-peer support systems at community level. The community didnot stigmatise against children with acute malnutrition.	VHTs, HWs, carers of beneficiaries in the program, carers of children not in the program, community leaders, community members (men & women), carers of children not in the program, NGO staff, teachers

7	Good community perception of the program	OTC and SFP	Community expressed positive opinion of the program; they felt that “it was helping their children”. This in the longer term would encourage communities to access the OTC/SFP services through self/peer referrals.	VHTs, carers of beneficiaries in the program, HWs, community members (women), Carers of children not in the program, community leaders, NGO staff, teachers
8	Active VHT system	OTC and SFP	The program had a team of trained, equipped and active VHTs engaged in active case finding and mobilization at community level. This ensured early case identification and referral to the program as well as follow up at community level to improve adherence.	VHTs, HWs, NGO staff, Carers of beneficiaries in the program, community leaders
9	Collaborative relationship between HWs, VHTs, program staff and community	OTC and SFP	Communities were aware of the role of the different VHTs in the nutrition program. VHTs were able to referral and follow up beneficiaries to the program. This positive collaboration would improve treatment seeking behaviours among communities.	VHTs, carers of beneficiaries in the program, carers of children not in the program, DHT, community leaders, health workers, NGO staff, teachers
10	Regular outreaches activities	OTC and SFP	Integrated outreach activities particularly to the host communities reduced the distance to access the OTC/SFP sites	HWs, VHTs, NGO staff, community leaders, religious leaders
Barriers				
1	Poor community mobilization	SFP	There were still segments of the host communities who were not aware of the program. As such they didn’t access services because they were not aware of their availability.	Quantitative analysis of responses among SAM/MAM children not in program (figure 20), HWs, NGO staff, DHT
2	Long distance	OTC and SFP	Some of the beneficiaries had to travel distances of over 5km on poor roads to access the OTC/SFP services. While outreaches improved enrolment of these clients to the program, follow up was challenge due to the long distance and many defaulted from the program shortly after. High defaulter rates result in many non-recovered children which affects community perception of the program. This in turn may result in poor health seeking behaviour.	Time to default data, Observation, health workers, Carers of children in the program, VHTs, Carers of children not in the program, Community members (women), Community leaders, NGO staff
3	Long waiting times during OTC/SFP clinic days	OTC and SFP	Carers expressed that they often had to wait for over 3 hours to receive services during follow up days. The major observation leading to this was /few/late/absent staff. Long waiting times de-motivates the caregivers and increase default rates	Carers of beneficiaries in the program, HWs, VHTs, Carers of children not in the program, Community leaders, Community members (women), NGO staff,
4	Heavy workload for HWs and VHTs	OTC and SFP	Many HWs and VHTs reported to be overwhelmed by their current workload. At the HW level, because HWs had to service high numbers of OTC/SFP clients during clinic days alongside their routine duties, the waiting time was very high. This de-motivated carers and increased default rates.	Observation, HWs, carers of beneficiaries in the program, NGO staff, VHTs, teachers, community leaders

5	Poor records keeping and management	OTC and SFP	Poor records management was noticed across all health facilities in the recording of patient data. This had an indirect impact on the program in that it may mask poor programme performance thereby limiting the ability of programme implementers to address gaps in the program.	Observation, health workers, NGO staff
6	Food insecurity	SFP	As a result of inadequate food availability at HH level, beneficiaries perceived the SFP rations as a supplementary source of food and as a result there was widespread sharing of the rations. While the estimation of rations per beneficiary takes into consideration HH sharing, the practice may affect the recovery rates which may in turn affect the perception of the program.	HWs, Community members (women), Carers of beneficiaries in the program, Community leaders, NGO staff, VHTs, teachers
7	Language barrier	OTC and SFP	There was a challenge for refugees to receive services in the absence of translators at key contact points. And yet there are few translators available at the different facilities. It also affected nutrition and health education which in turn affected adherence to the treatment protocol. Sometimes due to frustration with the language problems, referred cases were unable to access the nutrition services.	Observation, HWs, VHTs, NGO staff, Religious leaders, teachers, DHT
8	Inadequate motivation for VHTs	OTC and SFP	VHTs felt that they didn't receive adequate facilitation (both monetary and non-monetary incentives). This affected screening activities especially at health facilities (absenteeism, late arrivals) and defaulter tracing and follow up at community level.	VHTs, HWs, community leaders, NGO staff, Carers of beneficiaries in program, Carers of children not in program

Concept maps are data analysis techniques that show the findings and the relationships between the barriers and boosters. They are also useful when scoring findings to estimate overall program coverage.

Figure 16: Concept map (OTC)



3. Hypothesis construction and testing

The qualitative and quantitative data collected during stage 1 was validated through a process of hypothesis setting and testing. The hypothesis set was based on the data on barriers and boosters to coverage which provided more information about potential differences in coverage between population locations and population segments. The hypotheses were then tested through a small area survey.

3.1Hypotheses:

Based on the data in stage 1, the team identified the concentration of services in refugee settlement as having greatest influence on coverage. It was hypothesized that due to the presence on various nutrition interventions in the refugee settlements, communities were mobilized and access to services was greater than in refugee settlements, therefore coverage of SAM/MAM treatment was higher in the refugee resettlements than in the host communities. Based on this assumption two hypotheses were formulated;

1. Villages/Clusters in refugee settlements will have coverage greater than or equal to 50% (Sphere threshold for coverage in rural areas)
2. Villages/Clusters in the host communities will have coverage less than 50% (Sphere threshold for coverage in rural areas)

These hypotheses were then tested through the small area survey. To do this, 2 clusters in refugee settlements and 2 villages in the host communities thought to have good coverage based on findings in stage 1 were purposively selected.

The clusters/villages selected were;

Location	Cluster/Villages	Reasons for selection
Refugee settlements	Cluster K, Ranch 1	Intensive sensitization by NGOs Proximity to 2 HF's with OTC/SFP services Biweekly active case finding by VHTs
	Cluster M, Ranch 37	
Host communities*	Kalwala	Few sensitization activities – only done during outreaches No door to door screening by VHTs Long distance to the nearest HF (approx,10km)
	Kisweka, Mombi, Kalagariya	

* After day 1 of the survey after review of the data from the field, the investigator thought that involvement of VHTs could have introduced bias in the survey process therefore 2 other villages (Mombi and Kalagariya) were selected with more rigorous supervision of the door-to-door screening process.

3.1.2 Small Area Survey

During the small area survey door-to-door screening was used to find the SAM and MAM cases in the community. Because the admission criteria used by the program allows for admissions based on MUAC and WHZ the assessment was based on the three anthropometric measurements (MUAC, weight and height). The SQUEAC team was divided into 4 teams with a team of 2

people paired with a mobiliser (VHT) to help with carrying the equipment and location of households in the cluster/village. Each team was equipped with a MUAC tape, an electronic weighing scale, an infant height board and a MOYO chart for the Z-score assessment.

When a team arrived in a village/cluster, the village was divided into clusters with a cluster consisting of 25 households. One cluster was then selected from each village for the door-to-door survey. At each household visited, a HH census was undertaken to find out whether there were children under 5 years of age in the HH. All children U5 in a household were assessed for oedema, MUAC, Weight for Height Z score. The children were then classified as SAM, MAM or normal cases based on the findings. A questionnaire was then administered for all the SAM/MAM cases in a household.

3.1.3 Results

The findings of the small survey are summarized in table 5 below;

Table 5: Small area survey findings

Location	SAM covered	SAM recovering	SAM uncovered	MAM covered	MAM uncovered
Cluster K			I	III I	
Cluster M			I		III I
Kalwala		I	III	I	I
Kisweka			I	II	II
Mombi		I	I	I	II
Kalagariya				III	III

Analysis of the findings was then done using the Lot Quality Assurance Sampling (LQAS) classification technique. This involves examining the number of cases found (n) and the number of cases covered against a threshold value (d). The threshold value depends on the number of cases found (n) and the standard (p) against which coverage is being evaluated.

The Sphere standard for coverage in a refugee camp setting is 90%. However, the set up of Kiryandongo refugee settlement is more in likeness to a rural area and lacks the structure that a traditional camp setting may have. Therefore 50% coverage, the standard used in rural settings, was used.

Threshold values for coverage proportion were calculated using the formula:

$$d = n \times \frac{p}{100}$$

As the standard of coverage we are using in this SQUEAC assessment is 50%, this can be translated as:

$$d = n \times \frac{50}{100}$$

The hypotheses were then tested based on the findings as summarized in table 6 below;

SAM coverage

Location	n	D	Covered/recovering cases	Decision rule met/unmet
Refugee settlements	2	1	0	Decision rule not met
Host communities	7	3	2	Decision rule met

MAM coverage

Location	n	D	Covered cases	Decision rule met/unmet
Refugee settlements	2	6	6	Decision rule met
Host communities	5	7	7	Decision rule not met

3.1.4 Conclusion

Conclusion: although the decision rule was not met for SAM coverage in refugee settlements and MAM coverage in host communities, the survey highlighted that the coverage in both refugee and host communities was relatively homogenous (not patchy) therefore it was possible to proceed to stage 3 and conduct a wide area survey in both locations.

4. Developing the Prior

The prior is the belief of what coverage of a programme is based on the qualitative and quantitative data collected in stage 1 and 2 of the SQUEAC. It is based on the *prior* information or existing information about the program. The prior is expressed as a probability density also known as the prior mode. The prior mode was determined based on an average of 4 priors also determined using 4 different methods: the concept map scores, histogram of belief, weighted barriers and boosters and un-weighted barriers and boosters. Based on the results of the small area survey it was observed that the SAM cases found were too few for the process to be continued in the wide area survey. As such the prior mode was only determined for the SFP program.

4.1 Weighted Boosters and Barriers

The investigation team reviewed the boosters and barriers (identified during stage 1) and awarded each one a score according to their relative impact on coverage. A score of between 1 and 5 (1 = low impact, 5 = high impact) was allocated to each barrier and booster. This ensures that the prior is influenced by the relative importance of each barrier. Table 6 and 7 illustrate the sources and methods used to support the weighting given to each booster and barrier. Thereafter, the sum of the scores given to the barriers and boosters was calculated and the following formula used to determine the prior mode for weighted barriers and boosters

$$BBQ_{weighted} = \frac{(Boosters - Barriers) + 100}{2}$$
$$= \frac{(44 - 32) + 100}{2} = 56\%$$

4.2 Unweighted Boosters and Barriers

The unweighted boosters and barriers method allocates the same score to each booster and barrier. This means that the only the quantity of each booster and barrier influences the prior. The sum of the scores for the unweighted boosters and the barriers was calculated and the same formula used to calculate the prior mode.

$$BBQ_{unweighted} = \frac{(Boosters - Barriers) + 100}{2}$$
$$= \frac{(60 - 45) + 100}{2} = 57\%$$

Table 6: Weighted boosters

No	Positive factors (Booster)	Simple BBQ Prior Mode - Weighted Boosters		
		Triangulation by Source and Method	Weighting	
			Simple	Weighted
1	Increased active case finding through routine nutrition screening at the health facility and community level and existence of a good referral system to and between HFs. Improved skills by VHTs resulting in few cases rejected at health facilities	2c, 11c, 2b, 2b, d, 1c, 4c, 4b, 2c, 9c, 9a,2c, 2b, 2b, 2b, 4b, 2c, 9c, 2a, 9a,2c, d, 4c, 4c, 1c, 2b, 2b, 4c, 4c, 4c, 4b, 4b, 3c, 2c, 9c, 9c, 9a,2c, 4c, 2b, 2b, 2b, 4c, 1c, 4c, 3c, 3c,2c, 4c, 11c, 4c, 1c, 4c, 2b, 2b, 4c, 4b, 4b, 3c, 3c, 2c, 6c, 9c, 9c, 11b, 12c	5	4
2	Health workers trained on IMAM are able to follow MOH criteria for admission and discharges for SAM/MAM; this improves case finding and management in both OTC and SFP. Additional support supervision on IMAM provided by ACF technical staff.	2c, 2b, 2c, 3c, 9c, 9c, 10c,2c, 2b, 2c, 9c, 9a, 10c,2c, 1c, 1b,2c, 1c, d, 1c, 1c, 2b, 2b, 2c	5	4
3	Good community awareness of common childhood illnesses leads to good health seeking behavior	2c, 4c, 4c, 4c, 2b, 2b, 6b, 2b, 4c, 1b, 8b, 6b, 4c, 6c, 7c, 2c, 6c, 1b, 14b,1c, 1c, 4c, 1b, 8b, 6c, 7c, 6c, 11b, 14b	5	3
4	Follow up by VHTs and HWs reduces defaulting	2c, 4c, 4c, 1c, 4c, 2b, 2b, 4c, 4c, 1b, 8b, 1b, 4b, 3c, 4c, 3c, 2c, 9c, 9c	5	3
5	No stock out of supplies (both RUTF/CSB) reduces length of stay on program and community perception of the program.	2c, 4c, 1c, 2b, 1b, 3c, 3c, 2c, 9c, 12c, 10c,1b, 8b, 1c, 1b	5	5
6	VHTs and Health workers have been trained on nutrition and IYCF, and conduct nutrition education at health facility and community level.This increases community sensitization on nutrition, leading to good knowledge and understanding of malnutrition and reduced stigma for malnutrition resulting in early treatment seeking behavior, self referrals and optimal utilization of RUTF/CSB	11c, 4c, 4c, 2b, 2b, 2b, 2b, 4c, 4c, 1b, 8b, 6b, 3c, 6b, 9c, 10c, 3c, 7c, 2c, 2c, 3c, 9c, 9c, 9a, 11b, 9c,4c, 4c, 4b, 4b,6b, 4c, 3b, 6c, 7c, 6c, 3c, 11b, 11b,11b, 12c, 10c,4c, 1c, 11c, 4c, 2b, 2b, 2b, 6b, 2b, 4c, 1c, 4c, 1b, 8b, 1b, 3c, 3b, 4c, 6c, 4b, 2c, 6c, 3c, 9c, 9c, 9c, 11b, 14b, 9c, 12c, 2b, 4c, 2c, 9c, 9c, 9c, 1c, 1c, 2b, 1b, 8b, 1b, 3c,1c, 1c, 1b, 1c, 2c, 1c, 11c, 1c, 2b, 2b, 2b, 1c, 1b, 8b, 6b, 4b, 3c, 4b, 9c, 9a, 12c,6b, 4c, 6b, 3b, 4c, 6c, 3c, 7c, 6c, 11b, 14b, 9c	5	4

7	Good community perception towards the programme	4c, 1c, 4c, 4c, 1c, 4c, 2b, 2b, 6b, 10c, 2b, 2b, 2b, 4c, 1c, 1b, 8b, 1b, 4b, 3c, 3c, 4c, 4c, 6c, 4b, 1c, 3c, 2c, 3c, 9c, 9c, 9c, 9c, 11b, 9c, 2c, 1c, 2b, 6b, 2b, 1c, 1b, 1b, 6b, 3c, 3c	5	5
8	Active, trained, equipped and motivated VHTS to conduct community and facility based screening and referral increases early case admissions. With additional support, supervision and coordination from MOH and ACF staff. This is augmented by availability of functional anthropometric equipment at contact points in the health facilities.	4c, 4c, 4c, 2b, 4c, 4c, 4b, 4b, 4c, 4c, 4c, 4c, 9c, 9c, 9a, 4c, 4c, 4c, 9c, 4c, 4c, 2b, 4c, 4b, 4c, 4b, 1c, 3c, 4c, 4b, 9c, 9c	5	4
9	Good community mobilization increases awareness of the program and promotes good collaboration between VHTs, health workers, communities, community leaders and program staff	4c, 4c, 4c, 4c, 1b, 8b, 3c, 2c, 9c, 9c, 9a, 9c, 9c, 10, 10c, 3c, 4c, d, 3c, 2c, 3c, 3c, 9c, 9c, 9c, 11b, 11b, 9c, 9c, 12c, 10c, 9a, 9c, 9c	5	3
10	Good attitude of HWs towards IMAM beneficiaries	1c, 1c, 1c, 16, 8b, 1b, 6c, 1c, 2c	5	3
11	Presence of other nutrition program in the community, Support from nutrition NGOs ,Availability of livelihood programs	2b, 2b, 2b, 4b, 9c, 9c, 9c, 9c, 2b, 2b, 4c, 3c, 3c, 3c, 3c, 9c	5	3
12	Integrated outreaches increase access to OTC and SFP services particularly in areas far from health facilities	2b, 2b, 2b, 4c, 9c, 9c, 9c, d, 2a, 3c, 12c	5	3
Total			60	44

Table 7 Weighted barriers

No	Simple BBQ Prior Mode - Weighted Barriers			
	Negative factors (Barrier)	Triangulation by Source and Method	Weighting	
			Simple	Weighted
1	Heavy staff workload for HWs and VHTs leads to poor record management	d, 2c, 1c, 1c, 2b, 2b, 1c, 1b, 9a, 11b, 9c, 9c, 4c, 4c, 3b, d, 2c, 2b, 2b, 2b, 2c, 9a, 9c, 2c, 4b, 9a, 9c, 2b, 3c, 6b, 2c, 14b, 2b, 2b, 2b, 6b	5	5

2	Absenteeism/Late reporting and poor attitude of health workers increases waiting time and leads to poor health seeking behavior	2c, 4c, 1c, 1c, 4c, 4c, 4c, 1c, 1b, 8b, 1b, 14b, 4c, 4c, 1b, 3c, 4c, 4a, 3c, 9c, 14b, 1b, 6b, 6b, 3c, 9a, 14b	5	3
3	Long distance reduces access to IMAM services and increases defaulter rates and	2c, 1c, 4c, 2b, 2b, 2b, 4c, 2a, 9a, 1b, 8b, 3c, 3c, 4c, 6c, 2c, 9c, 9c, 14b, 2c, 2b, 3c, 3c, 1c, 6b, 2c, 9c	5	5
4	Inadequate community sensitization resulting in lack of knowledge of malnutrition, stigma for malnourished patients, poor IYCF and care practices and higher incidence of malnutrition	2c, 11c, 4c, 1c, 2b, 6b, 2b, 1b, 8b, 3c, 1c, 3b, 6b, 1c, 7c, 2a, 6c, 10c, 2c, 4c, 11c, 4c, 2b, 2b, 1b, 3c, 3c, 4c, 6b, 3c, 9c, 9c, 12c, 10c, 11c, 6b, 7c, 9c, 2b, 2b, 9c, 2b, 2b, 6b, 3c, 3b, 1a, 3c, 7c, 6c, 9c, 9c, 9c, 11b, 14b, 9c, 10c, 12c, 2b, 3c, 9c, 9c, 2b, 2b	5	4
5	Inadequate knowledge on nutrition among VHTs and MOH staff results in low community sensitization on nutrition. This is exacerbated by low levels of supervision and support for VHTs and HWs by program staff	2c, 1c, 2b, 2b, 6b, 6b, 6c, 4c, 10c, 4c, 1c, 4c, 4c, 2b, 2b, 2b, 2b, 2b, 2b	5	3
6	Food insecurity and poverty leads to sharing and selling of CSB	2c, 2b, 6b, 6b, 4c, 1c, 3c, 6c, 9c, 2a, 11b, 1c, 1c, 2b, 11c, 4c, 9c, 9c, 9c, 12c, 4c, 3c, 9c	5	2
7	Inadequate facilitation/motivation for VHTs leads to low levels of follow up of malnourished cases and inadequate screening in some communities.	2c, 4c, 4c, 2b, 2b, 4b, 3c, 4c, 4c, 3c, 9c, 9c, 9a, 2c, 4c, 2b, 2b, 4b, 3b, 2b, 1b, 18b, 9c	5	4
8	Language barrier affects sensitization activities at community and health facility level	d, 2b, 2b, 4b, 3c, 9c, 9c, 9a, 9c, 11b, 14b, 9c, 9c, 12c, 10c	5	3
9	Poor community mobilization leads to poor community attitude towards health workers and low male engagement in child health and nutrition programs which leads to poor health seeking behavior	2b, 4b, d, 6b, 3c, 9c, 9c, 2c, 6b, 4b, 3c, 3c, 6b, 3c, 9c, 11b, 9c, 12c,	5	3
Total			45	32

4.3 Concept Map Scoring

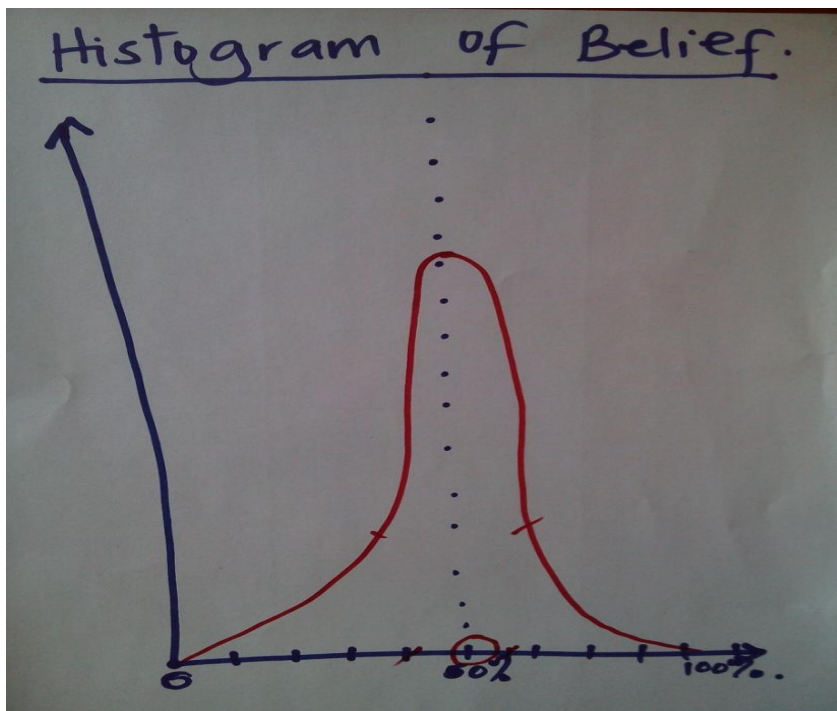
Concept maps are scored through analysing each connection between positive and negative factors. A positive connection is given a +1 value, and each negative connection is given a -1 value. These were determined for the SFP concept maps and then added together to a total number of positive factors and a total number of negative factors. The same formula as used for the weighted and unweighted BBQ is followed for the scoring of the concept maps.

$$= \frac{(53 - 45) + 100}{2} = 54\%$$

4.4 Histogram of belief

A histogram prior was developed for the SFP programme based on the team's prior knowledge of the programme from stage 1 and 2. The SQUEAC training participants discussed the highest and lowest values that coverage could possibly be. The highest value was 55% and the lowest was 40%. From these values, we then worked inwards to the prior mode of 50%.

Figure 17: Histogram of belief



4.5 Calculation of the prior

The four prior modes from each of the methods were then combined to determine the average prior mode:

$$\begin{aligned} &= \frac{BBQ_{weighted} + BBQ_{unweighted} + Histogram\ of\ belief + Cocept\ maps}{4} \\ &= \frac{56\% + 57\% + 50\% + 54\%}{4} = 54\% \end{aligned}$$

5. Stage 3: Wide Area Survey

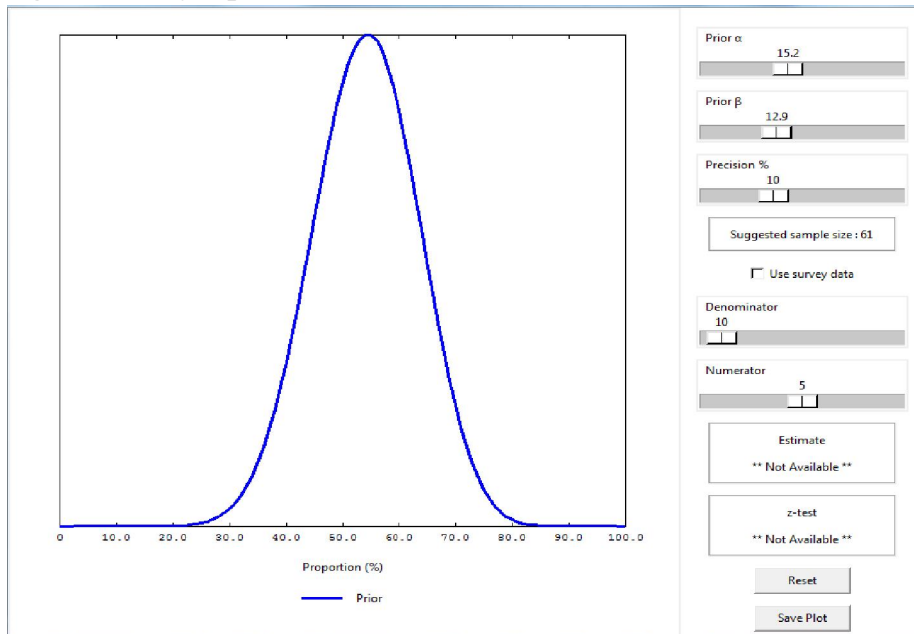
The main of stage 3 was to determine the coverage estimate for the SFP program in Kiryandongo refugee settlements. This was done through a wide area survey conducted to determine the likelihood of coverage which was then analysed together with the prior mode using a Bayesian calculator to determine the posterior coverage estimate.

5.1 Sampling for Stage 3

The first step in the sampling process for the wide area survey was to determine the sample size. The sample size for a wide area survey for a SQUEAC is the minimum number of acutely malnourished children that have to found during the likelihood survey to achieve the desired level of confidence in the posterior. The sample size was determined by entering the shape parameters (α -prior and β -prior) into the Bayes calculator to generate the recommended sample size.

As shown in figure 17 below with a prior estimate of 54% ($\alpha = 15.2$, $\beta = 12.9$), the suggested sample size was 61 cases.

Figure 18: Bayes plot – Prior mode



5.1.2 House to House Screening

The next step was to select the clusters/villages to sample for the wide area survey. This was done using the formula below;

$$n_{clusters/villages} = \left\lceil \frac{n}{average\ block\ population_{all\ ages} \times \frac{\% of\ population_{6-59\ months}}{100} \times \frac{MAM\ prevalence}{100}} \right\rceil$$

Where n is the sample size generated by the Bayesian calculator = 61

% of population 6 – 59 months = 16%, based on OPM refugee population statistics for Kiryandongo, November 2015

$$\text{Average village/cluster population} = 896, \text{ based on } \frac{\text{Total Kiryandongo district population}^{11}}{\text{Number of villages}} = \frac{204,288}{228} = 896$$

MAM prevalence; Based on the findings of the small area survey, it was realised that the GAM rate was much lower than reported in the most recent Food Security and Nutrition Survey, November 2014. Therefore the MAM prevalence used in the sampling determination was re-calculated based on MAM prevalence taking into consideration the confidence interval of the FSNA survey findings. The MAM rate was therefore;

$$\text{MAM prevalence rate} = 6.6 (95\% \text{ CI } 6.1 - 11.7)$$

$$6.6 - \frac{11.7 - 6.1}{2} = 3.8\%$$

The number of villages was then calculated as;

$$n_{\text{clusters/villages}} = \left\lceil \frac{61}{896 \times \frac{16}{100} \times \frac{3.8}{100}} \right\rceil = 12$$

The next step was to select the villages/clusters to be included in the survey. This was done using a simple random sampling technique in which the list of names of the different villages in the catchment area of the 5 health facilities and the different clusters were printed on pieces of paper and 12 villages randomly selected.

Due to time constraints experienced during the survey, additional teams of VHTs who were familiar with weight-for-height assessments were called in to support the data collection activities. Each SQUEAC team member was then paired with 2 VHTs for the data collection exercise. MAM cases were assessed using door-to-door screening as in the stage 2 small area survey. Similarly, assessment was based on MUAC, weight for height and oedema assessment.

5.2 Results

The findings of the survey are summarised in table 9 below;

Table 9: Wide area survey

	SAM covered	SAM recovering	SAM uncovered	MAM covered	MAM uncovered
Kihura			1	1	3
Cluster D			1		
Cluster G		1			
Tugo			1	2	5
Cluster F		1		1	
Cluster S*					
Cluster L				1	0
Katulikire			2		2
Cluster H				4	3

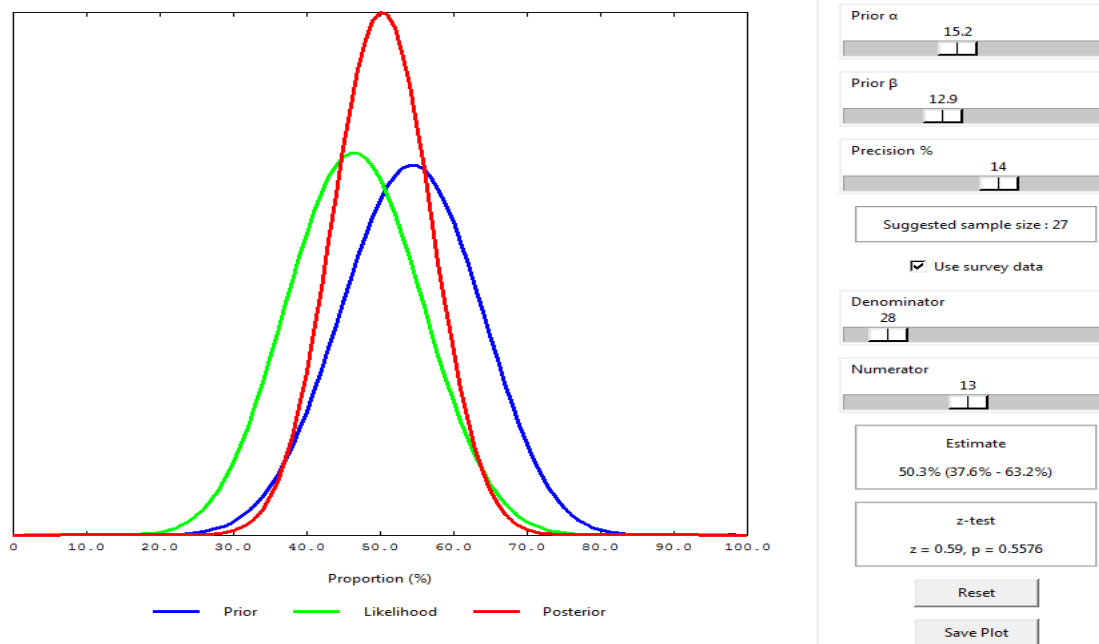
¹¹Kiryandongo District Population Statistics, Kiryandongo district health office, November 2015.

Cluster C1				2	1
Cluster A1				1	
Yelekeni				1	1
Total	0	2	5	13	15
				Total cases	35
* Very sparse population					

After the team had conducted assessment in the 12 villages, only 28 MAM cases had been found. It was decided to adjust the precision on the Bayes calculator from 10% to 14% achieving a required sample size of 27.

The information from the wide area survey was then fed into the Bayesian calculator to determine the coverage estimate.

Figure 19: Bayes Coverage Estimate

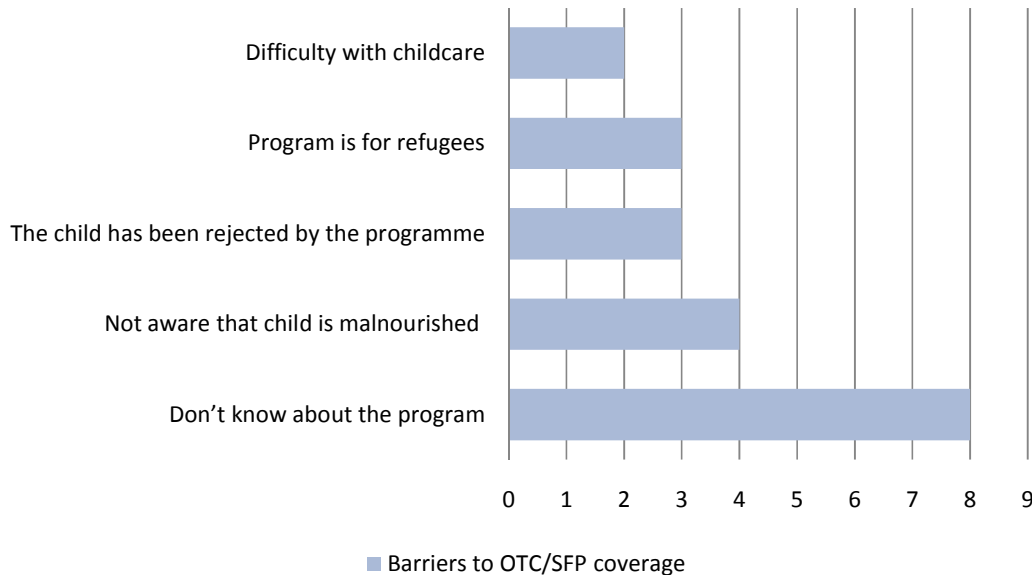


As indicated in figure 19 above, the posterior coverage was estimated to be **50.3% (95%, CI = 37.6% - 63.2%)**. There was obvious overlap between the prior and likelihood, they did not conflict. The prior is slightly higher which indicates a slight over estimation of coverage. However this is not significant and so does not conflict. This could have been through an over estimation of the boosters, or an underestimation of the barriers during the weighting exercises. The P value is greater than 0.05, and so the posterior coverage estimate is accepted.

5.3 Analysis of data collected in stage 3

During the wide area survey, a short questionnaire was administered for all the SAM and MAM children who were found that were not admitted to program. As indicated in table 9 above, there were a total of 5 SAM and 15 MAM uncovered cases. The findings of the interviews are summarised in figure 20 below.

Figure 20: Barriers to OTC/SFP coverage



The greatest reason for not accessing the OTC/SFP services was lack of program awareness particularly among the host communities while some carers reported that they thought the program was only provided to the refugees. Additionally some carers didn't know that their children were malnourished. This is in line with the findings of the qualitative stage that found that some segments of the population particularly in the host community were not aware of the program.

7. Conclusion

The coverage of the Community Based Supplementary Feeding Program in Kiryandongo district was 50.3% (95%, CI = 37.6% - 63.2%). This is slightly above the Sphere standard of 50% for rural areas. The assessment did not establish the coverage for the Out Patient Therapeutic Feeding program to insufficient number of SAM cases found in stage 3 wide area survey. Nevertheless, the qualitative stage of the survey highlighted key positive (boosters) and negative (barriers) that affect IMAM service delivery in the district.

The program has benefitted from key factors which have been critical to the scale up of IMAM services in the district. Among these the most important were;

- The presence of expertise within the district from NGOs (ACF, CWW) and key nutrition players (UNICEF, WFP); as a result of their presence the program had a good number of health workers that were trained in IMAM and complementary nutrition actions, for instance IYCF. These health workers received regular support supervision and mentorship from the main NGO staff (ACF, Concern Worldwide) which improved adoption of best practices in IMAM. Additionally facilities had received the necessary logistical supplies in terms of equipment and reporting tools. Most importantly it ensured a continuum of care for beneficiaries between OTC and SFP.
- No reported stock outs of RUTF and SFP commodities – this improves beneficiary retention in the program and ensures good treatment outcomes.

The survey established that while coverage of the program had been increased by establishment of new OTP and SFP sites and during outreach programs as demonstrated by the trend in admissions for both OTC and SFP over time, there were still gaps during service delivery that affected completeness of treatment for beneficiaries and program performance which must be addressed by the program to realize impact of the IMAM services over time. Critical gaps that should be addressed are;

- Beneficiary retention as observed by the high default rates and high proportion of early defaulters. While a system for active case finding exists at both facility and community level as observed by early admissions, many children defaulted after initial enrollment (2 weeks). Moreover there was weak follow up and tracing of defaulters by the VHTs.
- Managing staff workloads; many staff reported that they were overwhelmed by the numbers of patients to be served particularly during clinic days. This was also reported as a key factor in poor records management whereby some health-workers didn't fill the patient files completely.
- Low program awareness particularly in the host communities. Many carers of the malnourished children not covered by the program that were interviewed stated that they didn't know that their children were malnourished or that a nutrition program was available within their location. While others said they thought the program was only meant to refugees. As the program continues to expand within the host

communities, there is need for increased community mobilization to raise awareness at community level.

Nevertheless it is important to appreciate that the program had only been implemented for less than 6 months in some locations. This could have impacted the findings of the assessment. However it is also an opportunity to utilize the findings of the coverage assessment to implement the recommendations early on during implementations to ensure greater impact of the OTC and SFP interventions at community level.

8. Recommendations

Table 10: Recommendations for SFP/OTC improvement in Kiryandongo refugee settlement developed during the stakeholders workshop

Recommendation	Finding	Evidence	Actions to be taken	Responsible people	Level of priority
Increase on-job support to health workers during OTC and SFP clinic days	Heavy staff workload	- High admissions per health facility vs number of health workers per health centre - Long waiting time - Poor records management	Review current admissions for OTC and SFP per health facility	HC In-charges, ACF Nutrition staff	High
			Develop workplans for NGO staff support to health facilities on clinic days	HC In-charges, ACF Nutrition staff	Medium
			Train VHTs to support activities for instance; anthropometric assessment, dispensing of RUTF/CSB during clinic days	HC In-charges, ACF Nutrition staff	High
			Establish separate follow up days for OTC and SFP beneficiaries	HC In-charges, ACF Nutrition staff	High
			For clinics with lower case load in either OTC/SFP support integration of SAM/MAM follow up within routine care instead of clinic days	HC In-charges, ACF Nutrition staff	Medium
Establish a system of health facility - to health facility referral for MAM and SAM	Long distances to follow up days	- Long distance between health facility and catchment area (> 5km) - High defaulter rates	Map village catchment per health facility and distances between villages and health facilities and outreach posts	ACF, DHT	Medium
			Develop referral plans between health facilities based on distance/time travelled to health facility	ACF, DHT	Medium

			Ensure that beneficiaries are referred to their nearest OTC/SFP site for follow up	HC In-charges, ACF Nutrition staff	Medium
Establish regular outreach posts	High number of early defaulters	• Early defaulters (< 2weeks) traced to admissions during outreach posts • Irregular outreaches due to logistical constraints	Outreach posts should be established based on minimum distance e.g. 10km	HC In-charges, ACF Nutrition staff	High
			Develop plans for permanent/regular outreaches to farthest locations based on available logistics and HR resources	HC In-charges, ACF Nutrition staff	High
			Support VHTs to trace and follow up defaulters at established outreach posts	ACF Nutrition staff	High
			Referrals during non-regular outreaches should made to the nearest location for the beneficiary	ACF Nutrition staff, Health workers	High
Conduct community sensitization to raise program awareness	Low community awareness of program (host communities)	• Low awareness of acute malnutrition • Low awareness of available OTC/SFP services • Host community perception of the OTC/SFP services as meant for refugees	Develop IEC materials and social mobilization campaign to raise nutrition awareness	DHT, ACF Nutrition staff	High
			Conduct mass sensitization to raise program awareness with a focus on: local signs/understanding of acute malnutrition and available OTC/SFP services and sites by location	DHT, ACF Nutrition staff	High

Support intensive active case finding during rainy seasons	Increased prevalence of common childhood illnesses during rainy season	Increase in SAM admissions correlates with increase in occurrence of common childhood illnesses and rainy seasons	Assess additional requirements for active case finding VHTs during rainy seasons	Nutrition NGOs, VHTs	High
			Provide surge support and requirements (additional VHTs, screening tools, protective wear) for the purpose	Nutrition NGOs, VHTs	High
			Conduct at least one round of weight-to-height screening during the rainy season	Nutrition NGOs, VHTs	High
Facilitate VHTs and other social support structures to conduct active defaulter tracing and follow up	High defaulter rates	• Low motivation among VHTs • Low defaulter tracing and follow up by VHTs and HWs	OTC/SFP registers should be updated at the end of each clinic day and defaulters identified. Responsible VHTs should then be provided list of defaulters to follow up and refer back to health facility	Nutrition NGOs, VHTs	High
			Establish a motivation package (non-monetary) for VHTs with lowest defaulter rates in catchment areas	Nutrition NGOs, VHTs	Low
Facilitate linkages between OTC/SFP beneficiaries to available food security/livelihood interventions	Dependence on GFD (refugee population)	CSB is perceived as food Sharing of RUTF and CSB	Identify stakeholders implementing relevant FSL interventions in the refugee settlements	Nutrition NGOs,DHT	Medium
			Facilitate linkages between the stakeholders with OTC/SFP beneficiaries	Nutrition NGOs, DHT	Medium

			Hold regular dialogue with FSL stakeholders to advocate for linkages between nutrition and FSL interventions	Nutrition NGOs, DHT	Medium
Advocate for allocation of resources for translation services at key contact points	Language barrier affected communication between HWs and refugees	Few translators at key contact points	Map available translators and the gaps/needs especially at health facilities	Nutrition and health NGOs, DHT	Low
			Liaise with UNHCR and other health partners to increase the number of translators at key contact points	Nutrition and health NGOs, DHT	Low

Appendix a

Workplan for SQUEAC Kiryandongo

Activity	Date	19	20	21	22	23	24	25	26	27	28	29	30	1	2
	Day	T	F	S	S	M	T	W	T	F	S	S	M	T	W
	No of days	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Stakeholder's sensitisation workshop	½	√													
Orientation on SQUEAC methodology	½	√													
Quantitative data collection and analysis – OTC data	1		√												
Quantitative data collection and analysis – SFP data	1			√											
Qualitative data collection training	1				√										
Qualitative data collection	3					√	√	√							
Hypothesis testing (small area survey)	1								√						
Concept mapping, scoring the BBQ, formulation of the prior	2									√	√				
Wide area survey (door to door screening)	2											√	√		
Determining the posterior and developing recommendations and action plan	1													√	
Debriefing workshop	1														√

Appendix b

Seasonal calendar

		Seasonal Calendar											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Diseases	Malaria				I	III	II	I	II	I	I	III	
	ARI				I	III	II	I	I	I	I	III	
	Acute diarrhea				I	III	II	I		II	II	III	
Crops/Produce	Maize	II						I	I				II
	Cassava				I	I	I	I	I	I	II	II	
	Beans								I	I	I	I	
	Groundnuts	II					II	II	I	I	I		
Staple food	Maize	III						III	III	II	II	II	III
Food availability	Food availability	III	II	I	I	I	I	II	II	III	II	II	II
Female labor demand	Garden activities	I	I	II	III	III	III	II	II	II	III	II	II
Male labor demand	Garden activities			II	III	III	II	II	II	III	III	II	I
Climate	Rainfall			I	II	III	II			II	III	II	
	Temperature	III	III					I	II	I			II

Appendix c

Team members – SQUEAC Kiryandongo

Name	Designation	Agency	Contact
Apio Sophie Jane	Nursing Officer	KDLG – Nyakadoti HC II	0782842794
Suzan Nahivia	Nursing Assistant	KDLG – Nyakadoti HC II	0752000763
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Akello Agnes	Nursing Assistant	KDLG – Panyandoli HC III	0783170377
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