



COVERAGE MONITORING NETWORK

COVERAGE ASSESSMENT

»SIMPLIFIED LQAS EVALUATION OF ACCESS AND COVERAGE
AND SEMI-QUANTITATIVE EVALUATION OF ACCESS AND
COVERAGE

2015

Karamoja, Uganda

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THE REPUBLIC OF UGANDA
MINISTRY OF HEALTH

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Abbreviations

CI	Confidence Interval
CMAM	Community Management of Acute Malnutrition
CUAMM	Doctors With Africa
DHIS2	District Health Information System
DNCC	District Nutrition Coordination Committees
EVH	Extremely Vulnerable Households
GAM	Global Acute Malnutrition
HW	Health Worker
IMAM	Integrated Management of Acute Malnutrition
ITC	Inpatient Therapeutic Care
IYCF	Infant and Young Child Feeding
LC1	Local Council
LOS	Length of Stay
LQAS	Lot Quality Assurance Sampling
M&E	Monitoring and Evaluation
MAM	Moderate Acute Malnutrition
MoH	Ministry of Health
MUAC	Mid Upper Arm Circumference
NGO	Non-Governmental Organisation
OTC	Outpatient Therapeutic Centre
OTP	Outpatient Therapeutic Program
PSU	Primary Sampling Unit
RUTF	Ready to Use Therapeutic Food
SAM	Severe Acute Malnutrition
SFP	Supplementary Feeding Program
SLEAC	Simplified Lot Quality Assurance Sampling Evaluation of Access and Coverage
SQUEAC	Semi-Quantitative Evaluation of Access and Coverage
UNAP	Uganda Nutrition Action Plan
UNICEF	United Nations Children's Fund
VHT	Village Health Teams
WFP	World Food Program

Executive Summary

Karamoja sub-region is a semi-arid area of northern Uganda that borders Kenya and Sudan. A number of nutritional surveys have been conducted in recent years, figures from 2013 indicate that prevalence of Severe Acute Malnutrition (SAM) was 3.5% and Global Acute Malnutrition (GAM) was 11%.

Over the past 5 years, UNICEF has scaled up its IMAM program from 33 centres to supporting 103 treatment centres, reaching around 10,000-11,500 cases annually. The World Food Program (WFP) is supporting 150 Community Based Supplementary Feeding Programs, extending their assistance to over 100,000 individuals.

Coverage assessments were conducted by ACF-UK in the Karamoja region from January to March 2015, in conjunction with UNICEF, WFP and MoH. The objectives of these assessments were:

- To map out point or period estimates of coverage of targeted areas.
- Identify boosters and barriers affecting coverage of OTC/SFP programs in the seven districts of the Karamoja.
- In collaboration with key partners and the MoH, develop specific recommendations to improve acceptance and coverage of the program.
- Build capacity in MoH and key partners in SLEAC/SQUEAC methodologies.

Coverage for the Outpatient Therapeutic Centre (OTC) and Supplementary Feeding Programs (SFP) in the Karamajo Region of Uganda were assessed using Simplified Lot Quality Assurance Sampling Evaluation of Access and Coverage (SLEAC) method.

The overall point coverage for the OTC Program **was 49%, (95% CI 47%- 52%)** and the SFP coverage is **49% (95% CI 48%-51%)**. Informed by the SLEAC, a Semi Quantitative Evaluation of Access and Coverage (SQUEAC) Evaluation was conducted in Moroto District. The Point Coverage Estimation for the OTC program was found to be **34% (95% CI= 24.4 % - 43.9%)**.

Some recommendations from the SQUEAC investigation include; 1) Conduct further investigations into opportunity costs, and consider options of outreach clinics to areas highly affected. 2) Increase community sensitisation on IMAM, childhood illnesses and health and nutrition education. 3) Recruit and train more health workers, VHTs on IMAM. 4) Strengthen M&E for IMAM. 5) Investigate the role of traditional healers in IMAM.

A full list of recommendations with a logical framework of implementation is included in this report.

Introduction

Karamoja sub-region is a semi-arid area of northern Uganda that borders Kenya and Sudan. The region covers a total landmass of 27,990 square kilometers. The region is divided into seven administrative districts, which overlap with the three main livelihood zones: agriculture, agro pastoral and pastoral¹. Out of 1.2 million Karamojong who live there, 82% live below the poverty line. There are several underlying factors to the region's underdevelopment, including its relative isolation and instability due to cattle rustling and conflict with neighbouring tribes. There is widespread food insecurity across Karamoja due to low agriculture productivity.²

The most recent surveys, carried out in 2013 by the School of Public Health, Makerere University, indicate that, the prevalence of Severe Acute Malnutrition (SAM) was 3.5% and Global Acute Malnutrition (GAM) was 11%.

Across the region, 21% are female-headed households, with the highest in Kotido at 43%. The second highest is in Moroto at 29%. Moroto also has the highest percentage of households taking loans or being in debt to access food at 73%. It also presents the highest prevalence of poor nutrition rates for children.³

Lack of food availability was highest in Napak and is the main reason for household food insecurity. In Nakapiripirit, again, "food access is a serious problem". Of those households in debt, 80% reported this was accountable to the purchase of food.⁴ It was reported that whilst Amudat had the highest score at 73% with acceptable food consumption, access to safe water, latrine and sanitation issues "were a serious concern in this district". Over 90% of households had no access to a private latrine. Child health and nutritional status was also reported as a serious problem in Kaabong.⁵ Whilst Abim appears to have increased livelihood options compared to other districts due to increased access to land plots for agriculture, 31% reported the sale of their produce as their main source of income. The main reason attributed to food insecurity was health with 20% of EVHs reporting sickness and physical inability as a barrier to farming.⁶

"Recent assessments of the Nutrition and Food Security in Karamoja indicate a deteriorating situation; the prevalence of malnutrition above alert level, high levels of food insecurity with households employing the entire spectrum of coping strategies".⁷

In 2010, the MoH established new guidelines for the treatment of acute

¹ WFP and UNICEF Food Security & Nutrition Assessment, AME Unit, WFP. June 2014.

² *ibid*

³ *ibid*

⁴ *ibid*

⁵ *ibid*

⁶ *ibid*

⁷ *ibid*

malnutrition, known as Integrated Management of Acute Malnutrition (IMAM)⁸. The guidelines included Community based Management of Acute Malnutrition (CMAM), with the intention of improving program coverage by bringing services closer to communities. In the past 5 years, both UNICEF and WFP have scaled up their IMAM program to increase program coverage. However, anecdotal evidence from program sites indicates a number of challenges and barriers that compromise program coverage.

Program coverage is one of the most useful and reliable indicators for measuring the performance of an IMAM program. There are many indicators (e.g. admission trends, cure rates, length of stay for cured and defaulters) to measure effectiveness, but only coverage provides a reliable measure of impact by measuring the proportion of needs met by an intervention. The recent development of comprehensive and innovative coverage monitoring tools (including Semi-Quantitative Evaluation of Access and Coverage (SQUEAC) and Simplified Lot Quality Assurance Sampling of Access and Coverage (SLEAC) by Valid International/FANTA-2⁹ has provided the means by which to monitor program coverage practically and easily. The real challenge is no longer what to measure or how to do so, but instead, how to make existing tools more accessible to all, maximise their utilisation at all levels of nutrition programming and effectively share results and lessons learned to improve service delivery. The SLEAC Survey took place between 20th January and 7th February 2015.

General Objective

To evaluate access and coverage of OTP and SFP programs using SLEAC/SQUEAC methodologies in the 7 districts of the Karamoja region with a view to strengthen routine program monitoring and improving program coverage.

Specific Objectives

1. Point or Period estimates will be informed by findings in the field (see below).
2. Identify boosters and barriers affecting coverage in the district where the SQUEAC will be conducted, identified by SLEAC results.
3. In collaboration with key partners and the MoH, develop specific

⁸ Guidelines for the Integrated Management of Acute Malnutrition in Uganda, MoH, 2010.

⁹ 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>)

recommendations to improve acceptance and coverage of the program.

4. To build capacity in MoH and key partners in SLEAC/SQUEAC methodologies.

Methodology

Implementing SLEAC/SQUEAC at the Regional Level

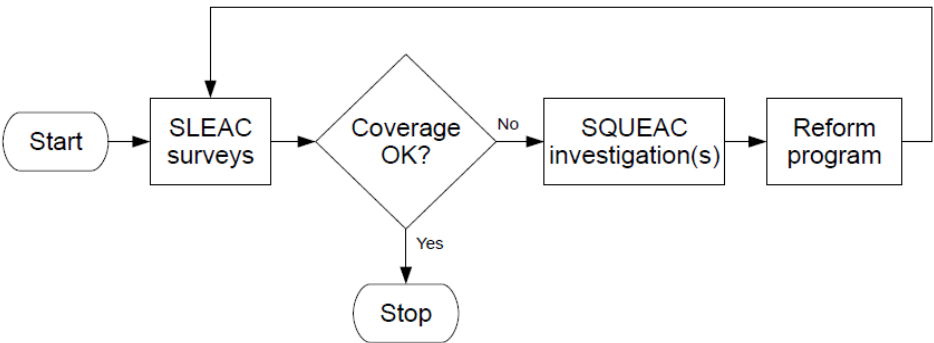


Figure 1. Represents the model of combining SLEAC and SQUEAC to inform the assessments that have been conducted in the Karamoja Region.

SLEAC and SQUEAC are designed to compliment each other:

SLEAC	SQUEAC
SLEAC is a wide-area method that can be used to classify and map the coverage of IMAM service at district, national, or regional levels.	SQUEAC is a local method used to identify factors influencing program success and failure at the local (i.e., district or clinic) level.
SLEAC provides a coarse overview of program coverage (i.e., coverage class) with only limited information on barriers.	SQUEAC provides a detailed view of program coverage and detailed information on barriers.

Figure 2.

Methodology

SLEAC Assessment design

SLEAC is a rapid and low-resource survey method that classifies (e.g. low, moderate or high) coverage thresholds at the district level. It is designed to compliment the SQUEAC method and is intended for use in programs delivering IMAM over many service delivery units, e.g. District programs delivering IMAM services through health care centers.¹⁰

SLEAC can also be used to estimate coverage over wide areas. SLEAC has been used for regional and national coverage surveys. In these surveys coverage is usually classified and mapped at the district level and estimated at the regional and national levels.

SLEAC requires small sample sizes (e.g. $n \leq 40$) to make a reliable threshold classification for an entire district. The SLEAC will also classify coverage over several service delivery units, in this case 7 districts, to inform a coverage estimate for the entire Karamoja Region.

SLEAC surveys use a two stage sampling design. The first stage will be a spatial sampling method that yields an even spatial sample from the entire district. This stratified approach provides a reasonably even spatial sample using village lists; primary-sampling units (PSUs) for each district.

Stratified Spatial Sampling - First stage sampling method:

The number of villages (n villages) to sample in each district to reach the target sample size, $n = 40$, is calculated using estimated population size, population structure and prevalence of SAM/MAM using the following formula:

¹⁰ 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

$$n_{\text{villages}} = \left\lceil \frac{n}{\text{average village population}_{\text{all ages}} \times \frac{\text{percentage of population}_{6-59\text{ months}}}{100} \times \frac{\text{SAM prevalence}}{100}} \right\rceil$$

Figure 4. Calculating sample sizes per district

Second Stage Sampling -Active and adaptive case finding

A within-community sampling method that uses an active and adaptive case- finding method to find all or nearly all, current and recovering SAM cases in a sampled village. Sampling should be exhaustive, meaning that sampling only stops when all cases in the community have been found. House to house sampling takes place to find all MAM cases in the sampling unit.

This is a two-stage sample because a sample of villages in the survey area is taken first (Stage 1) and then a 'census' sample of current, (covered and uncovered) and recovering SAM cases and covered and uncovered MAM cases is taken from each of the selected villages (Stage 2).

Coverage Standards and Thresholds

The coverage assessment had two distinct phases of fieldwork: SLEAC surveys in seven districts: this provided a three-part threshold classification of coverage in each district. These standards were used to create decision rules using the following rule-of-the thumb formula:

$$d_1 = n \times p_1 = n \times \frac{20}{100}$$

$$d_2 = n \times p_2 = n \times \frac{50}{100}$$

Coverage $\leq$ 20% : Low

Coverage between 20% and 50% : Moderate

Coverage $>$ 50% : High

d2

d1

Low	Moderate	High
0% to 20%	Greater than 20% up to 50%	Greater than 50% up to 100%

Figure 5. d1 and d2 threshold classifications

LQAS classifier : Three-tier classification

Two classification thresholds (d_1 and d_2) are used and are calculated as:

$$d_1 = \left\lceil n \times \frac{p_1}{100} \right\rceil \quad d_2 = \left\lceil n \times \frac{p_2}{100} \right\rceil$$

Classifications are made using the following algorithm:

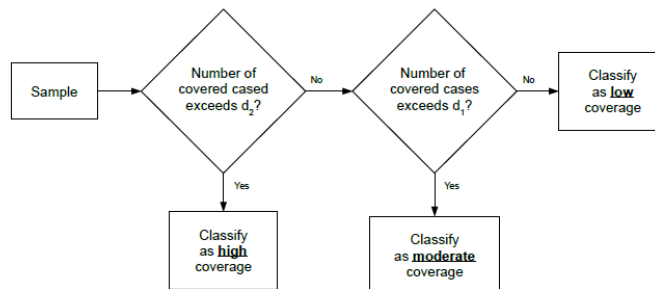


Figure 4: Algorithm for a three-class simplified LQAS simplifier

These decision rules were used to classify coverage in each of the seven districts, where n is the sample size achieved by the survey, p_1 the lower threshold (20%) and p_2 is the upper threshold (50%). A threshold value (d) is established to determine the number of cases that need to be covered in order for coverage to be satisfactory. If the number of covered cases exceeds the threshold value then coverage is classified as being satisfactory. If the number of covered cases found does not exceed the threshold value then the coverage is classified as being unsatisfactory. This allows for 3 coverage classifications: low, moderate or high.

An advantage of using SLEAC surveys initially, is to accurately and reliably classify coverage in a large area, in this case, the Karamoja region, using small sample sizes, $n = 40$ in each district. SQUEAC surveys can then provide a detailed view of program coverage and detailed information on barriers. Results from the SLEAC survey informed the most appropriate area to conduct the SQUEAC investigation.

Sampling of PSUs in each District

Villages were sampled as per the formula in figure 4.

District	Population	Average Village Population	% Under 5s	SAM prevalence Used (%)	Target Sample Size	Number of villages sampled
Moroto	83325	379	20%	3.5	40	14
Nakapiripirit	219086	1191	20%	3.5	40	7
Amudat	133941	1175	20%,	3.5, 1* *	40	30
Kotido	164919	1145	17%	2.4	40	20
Kaabong	157731	2937	17%	3.3	40	20
Abim	109039	355	17%	2.2	40	20
Napak	139941	244	17%	2.3	40	20
Total	1176315 ¹¹					

Table 1. Calculations for number of villages to be sampled

**The sampling interval for systematic sampling of villages was determined by dividing the total number of villages in each district by the number of villages needing to be sampled as per calculations in fig.4. When, as in some districts the sampling was not yielding n= 40, resampling occurred using a lower prevalence rate.

For example, in Amudat sampling was not yielding the sample size, and new information informed us the prevalence rate was in fact 1.8%. To ensure we could secure the sample size we resampled using the following formula to ensure n= 40 was reached.

Prevalence rate = 1.8% (95% CI 0.9 – 3.5)

$$1.8 - 0.9 / 2 = [0.45] = 1\%$$

Resampling then occurs using the lower SAM prevalence rate e.g. more villages have to be sampled to reach the required sample size of 40.

Point and Period Coverage Estimations

The **point coverage** estimator provides a snapshot of program performance and places a strong emphasis on the coverage and timeliness of case finding and recruitment.

$$= \frac{\text{Number of current cases attending the program (c)}}{\text{Total population}} \times 100 = \%$$

¹¹ Where applicable urban centers, army barrack, prison, hospital, school and hotel populations were removed from district population sizes. in PSU sampling

Number of current cases (covered, uncovered) (n)

The **period coverage** estimator includes recovering cases. These are children that should be in the program because they have not yet met the program discharge criteria.

$$\frac{\text{Number of current and recovering cases attending the program (n)}}{\text{Number of current and recovering cases attending the program} + \text{Number of current cases NOT attending the program}} \times 100 = \%$$

The choice of estimator to report should be informed by context:

If the program has good case finding and recruitment and short lengths of stay then the **period coverage** estimator is likely to be appropriate

If the program has poor case finding and recruitment and long lengths of stay due to late presentation and/or late admission then the **point coverage** estimator is likely to be appropriate.¹²

There are issues with referrals from VHTs to IMAM programs combined with long lengths of stay due to late treatment seeking behaviour. **Point** coverage is the most appropriate coverage estimator to report.

Results

Table 2 shows threshold coverage classifications for SAM in each of the seven districts of Karamoja.

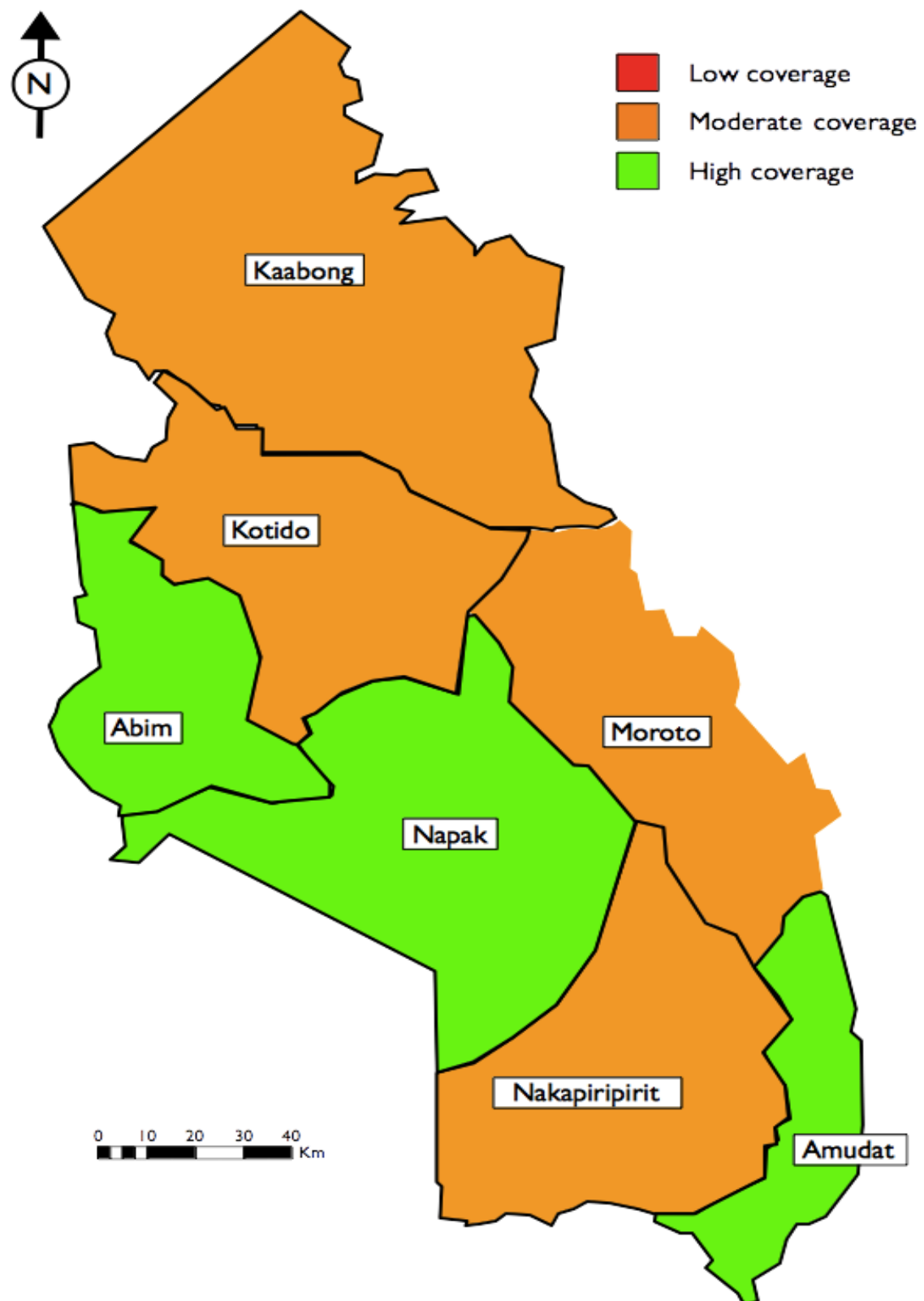
District	SAM covered	SAM uncovered	D2 (threshold = 50%)	C>D2?	D1 (threshold= 20%)	C>D1?	Coverage Classification
Moroto	19	43	31	No	12.4	Yes	Moderate
Nakapiripirit	19	28	23.5	No	9.4	Yes	Moderate
Amudat	39	17	28	Yes			High
Kotido	16	27	21.5	No	8.6	Yes	Moderate
Kaabong	19	21	20	No	8	Yes	Moderate
Abim	29	5	17	Yes	-	-	High
Napak	50	12	31	Yes	-	-	High

¹² Adapted 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>)

Total	191	153
Total number of cases	344	

Table 2. SAM threshold classifications

SAM coverage for Karamoja Region



Amudat, Abim and Napak are classified as having high threshold coverage. All other districts are classified as having moderate threshold coverage. Moroto, although

classifying as moderate, was observed by the investigators as having the lowest coverage, and therefore was chosen as the district for the SQUEAC investigation.

Since sample sizes in each district did not reach 96 SAM cases, a point estimate could not be calculated. A coverage rate for the region was calculated as the mean number of covered cases by the total SAM case load. Chi squared tests were implemented to understand differences in coverage among all districts. The Chi Square test value was 26.39 ($p < 0.05$) indicating that important differences on coverage rates among the districts exist and that overall coverage estimates for the region must be taken with caution due to the patchiness. The coverage estimate of SAM for the Karamoja Region is **49%, (95% CI 47%- 52%)**.

Table 3 shows coverage classifications for MAM in each of the seven districts of the Karamoja.

MAM Classifications for Karamoja			
District	MAM Covered	MAM Uncovered	Point Coverage Classification
Moroto	21	89	Low
Nakapiripirit	47	124	Moderate
Amudat	67	50	High
Kotido	44	60	Moderate
Kaabong	73	31	High
Abim	62	20	High ¹³
Napak	135	37	High

Table 3. MAM threshold classifications

SFP Coverage for the Karamoja Region

¹³ As previously stated, in order to calculate point coverage, the sample size has to be at least 96. As the total sample size for Abim district, is $n=82$, a threshold coverage classification has been provided, using the LQAS classifier. $C > D2$, and therefore, coverage for Abim is high.

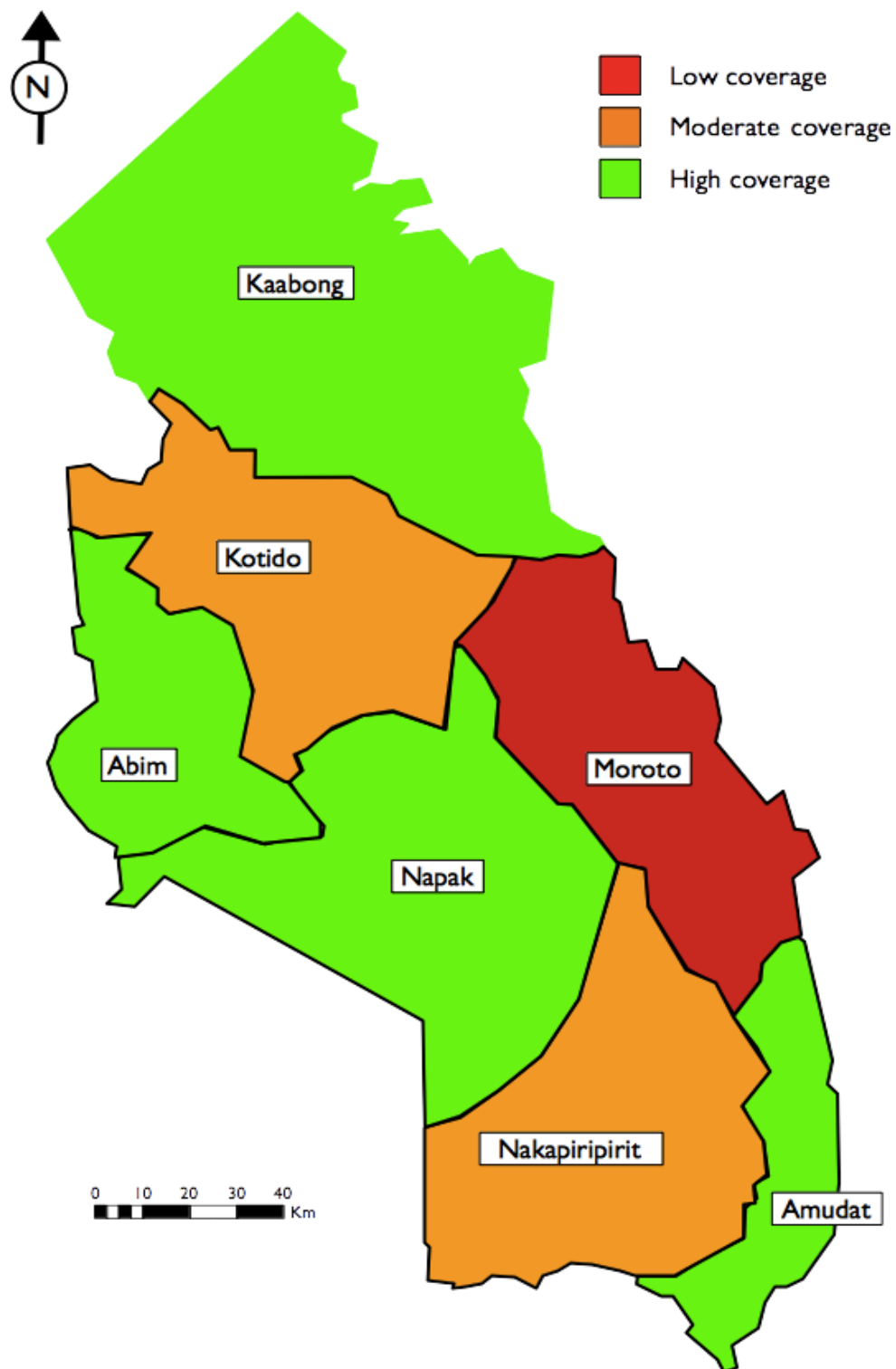


Figure 6. Map of SFP Coverage Classifications

Kaabong, Abim, Napak and Amudat all reported high threshold classification at the time of the survey. Kotido and Nakapiripirit reporting moderate. Moroto threshold classification was low.

Since the MAM sample size was bigger, point estimates were calculated for six of the districts as demonstrated in table four.

District	MAM covered	MAM uncovered	Total MAM	Point Coverage	Lower CI	Upper CI
Moroto	21	89	110	0.19	0.12	0.26
Nakapiripirit	47	124	171	0.27	0.21	0.34
Amudat	67	50	117	0.57	0.48	0.66
Kotido	44	60	104	0.42	0.33	0.52
Kaabong	73	31	104	0.70	0.61	0.79
Abim	62	20	82	N/A	N/A	N/A
Napak	135	37	172	0.78	0.72	0.85
Total	449	411	860	0.53	0.50	0.56

Table 4.

Again, a weighting exercise was conducted for SFP Coverage to obtain an overall estimate for the region. The MAM coverage estimate is 49% (95% CI 48%-51%).

It should be highlighted that the weighting and chi square testing indicate that coverage is patchy for both SAM and MAM coverage. They both have a reported coverage estimate of 49%. An overall coverage estimation in these circumstances, with spatial diversity of coverage, means an overall estimate tells us little about the region as a whole, e.g. some districts are very different from others in terms of point coverage. It is however a starting point for service development as no previous coverage estimation has taken place in the region before.

Barriers to service uptake and access by district

Kaabong Barriers to Access

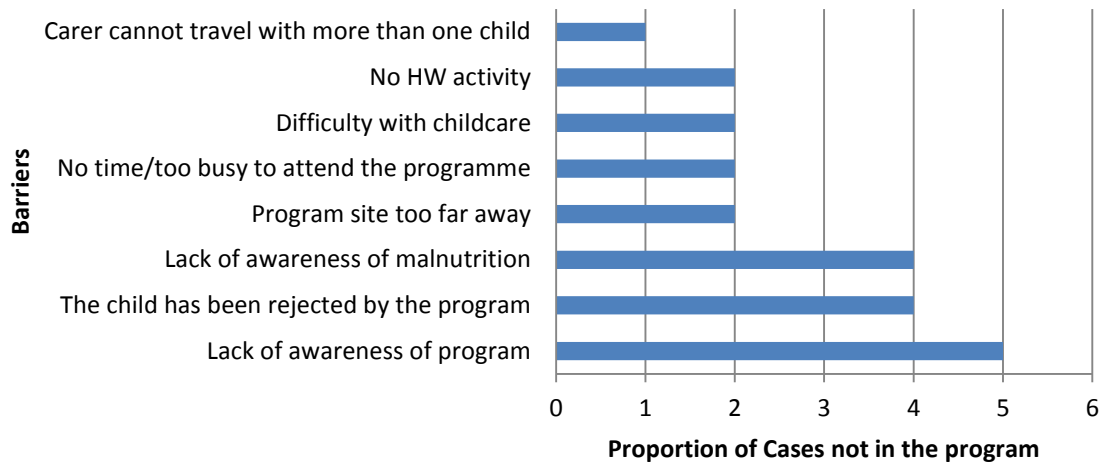


Figure 7. Barriers to Access in Kaabong

Lack of awareness of the program was the barrier most cited in Kaabong, followed by lack of awareness of malnutrition and the child being rejected by the program.

Kotido Barriers to Access

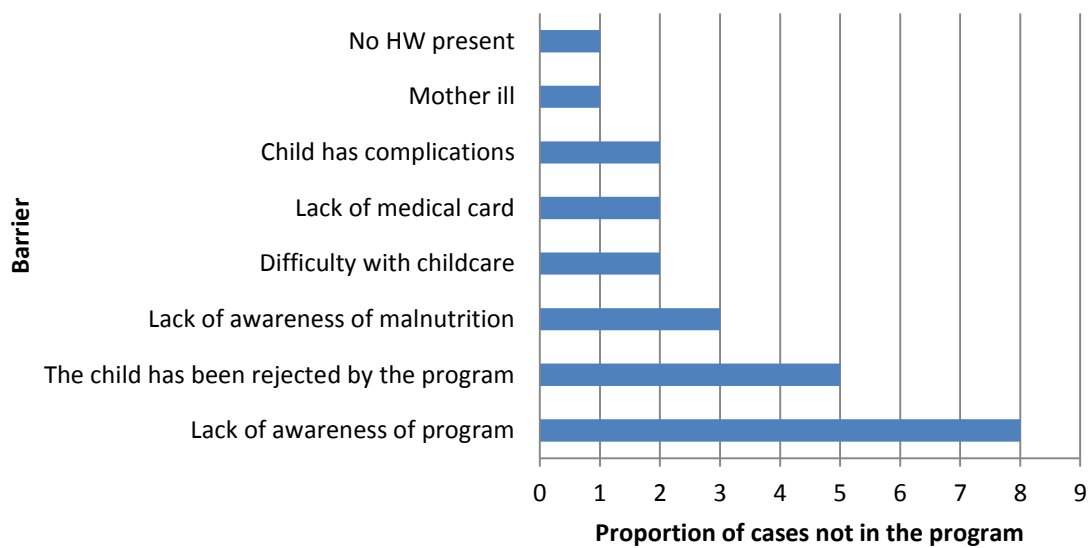


Figure 8. Barriers to Access in Kotido

No time/too busy to attend the program (opportunity costs) was the most cited barrier in Kotido, followed by lack of awareness of the program, then the child having been rejected by the program.

Abim Barriers to Access

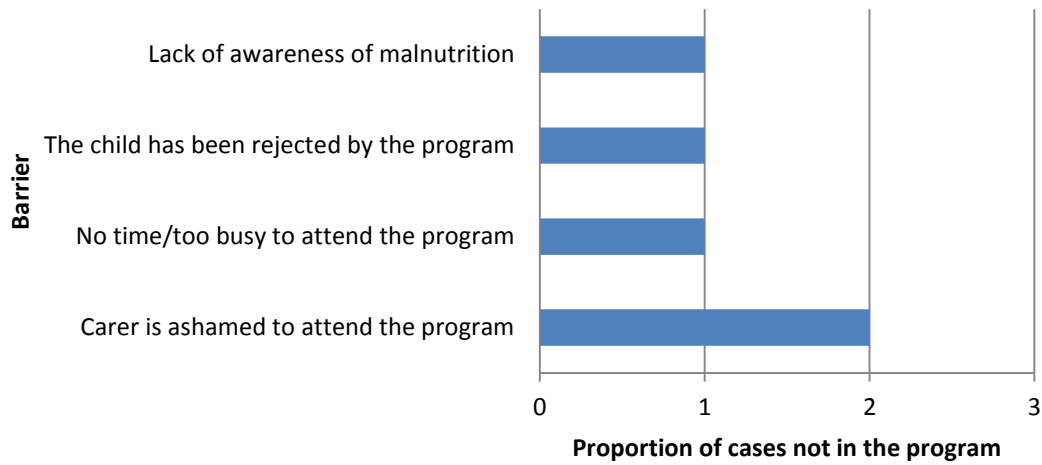


Figure 9. Barriers to Access in Abim

Napak Barriers to Access

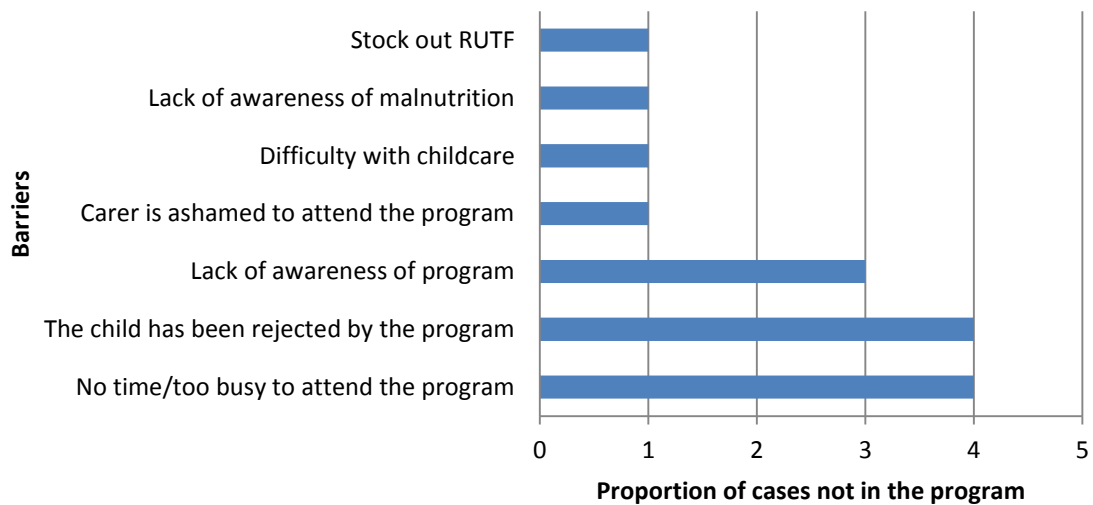


Figure 10. Barriers to Access in Napak

Opportunity costs were the most commonly cited barrier in line with the child being rejected. Lack of awareness of the program was the third most cited barrier.

Nakapiripirit barriers to Access

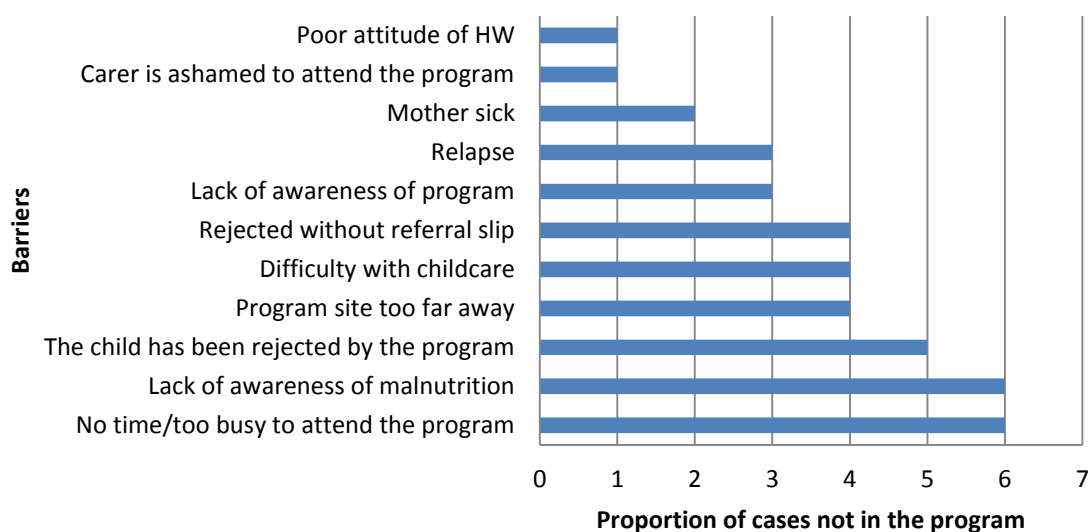


Figure 11. Barriers to Access in Nakapiripirit

Lack of awareness of malnutrition and opportunity costs were the most commonly reported barriers in Nakapiripirit.

Amudat Barriers to Access

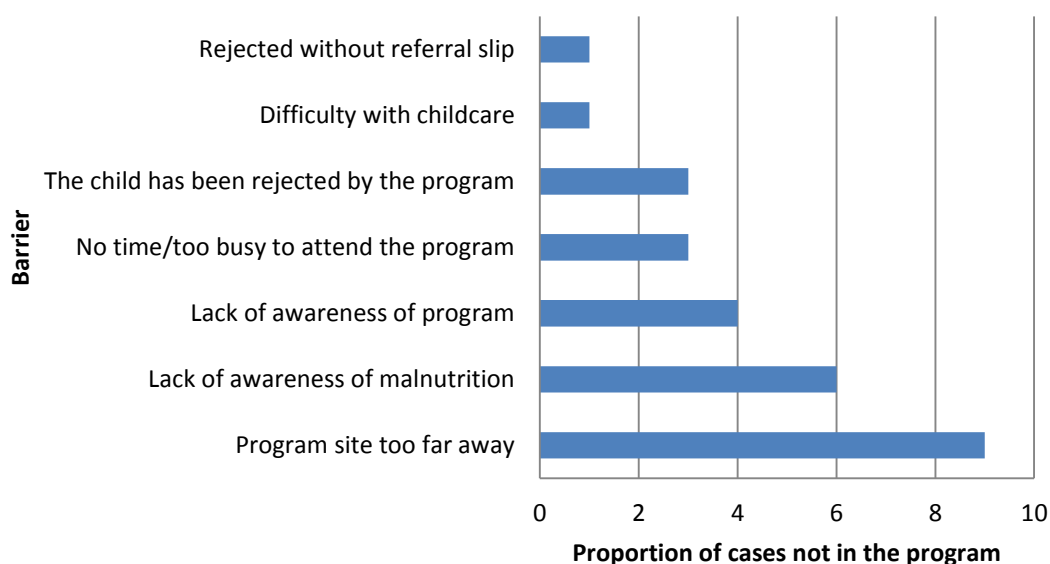


Figure 12. Barriers to Access in Amudat

Program site too far away was the most cited barrier followed by lack of awareness of malnutrition and lack of awareness of the program.

Moroto Barriers to Access

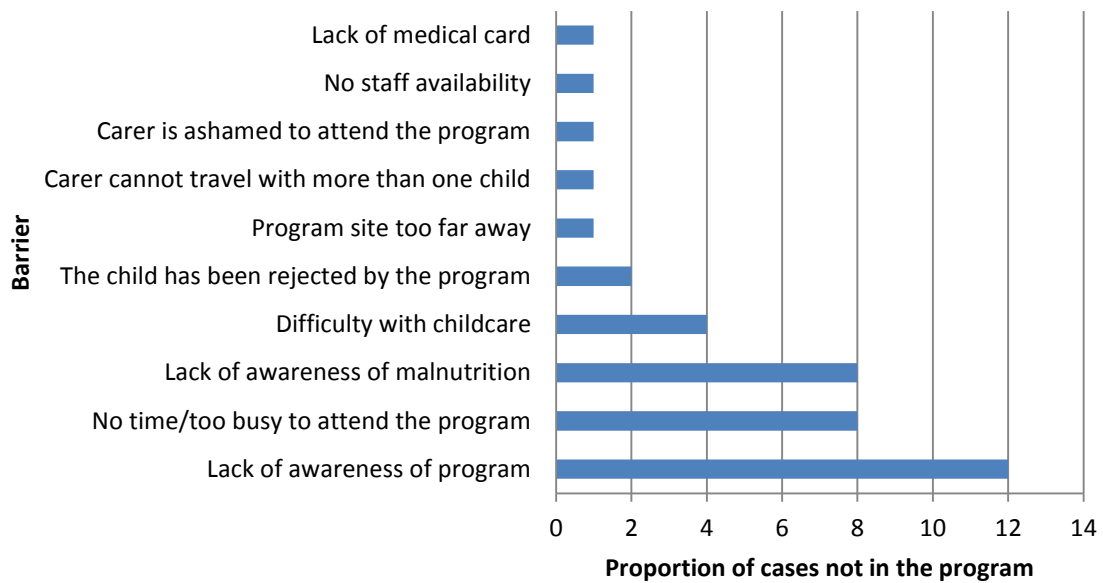


Figure 13. Barriers to Access in Moroto

Lack of awareness of the program is the highest reported barrier. Lack of awareness of malnutrition and no time/too busy to attend are both the next most cited barriers to access in Moroto district.

Barriers to Access of SAM services across the Karamoja

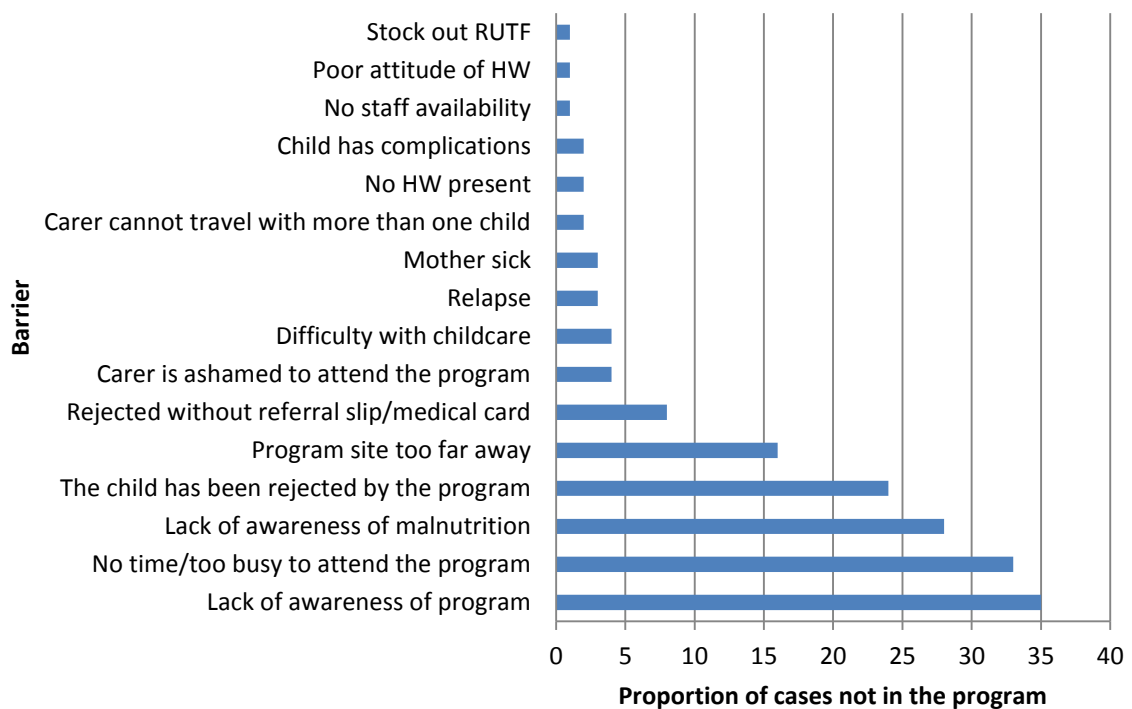


Figure 14. Barriers to Access for IMAM across the Karamoja Region

When barriers to access are collated for the entire seven districts, lack of awareness of the program and opportunity costs are the most commonly cited barriers. Lack of awareness of malnutrition and the child being rejected are the next most common barriers across the region.

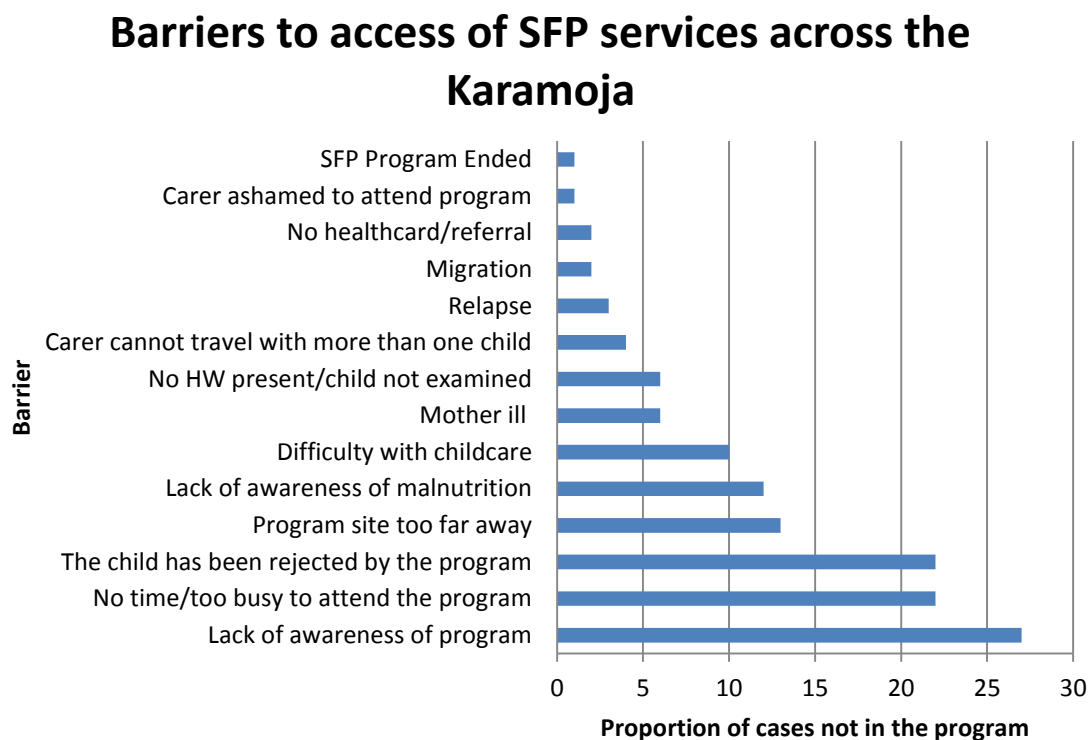


Figure 15. Barriers to Access for SFP across the Karamoja Region

Lack of awareness of the program and opportunity costs are the two most cited barriers to access for the SFP, followed by the child has been rejected by the program.

SLEAC Conclusions & Recommendations

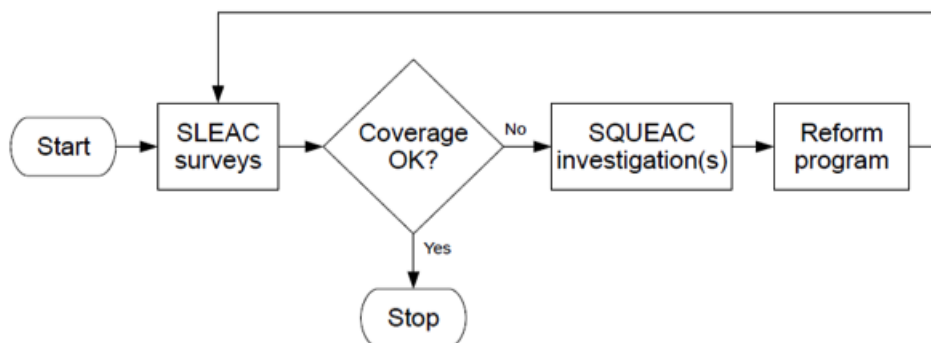
Results indicate spatially diverse coverage for both the OTC and SFP programs in the Karamoja Region as a whole. There are multiple barriers reported across all districts. Consistent themes in barriers were lack of awareness of the program, lack of awareness of malnutrition, opportunity costs and rejection by the program.

All of these barriers have an impact on coverage, particularly in Moroto and Nakapiripirit districts where coverage was lower for both the OTC and SFP programs. Moroto reported the lowest point coverage in both programs, for the entire region.

These barriers are interrelated; lack of awareness of both the program and malnutrition leads to late treatment seeking behaviour. This is exacerbated by opportunity costs whereby carers of beneficiaries seek casual labour or are too busy with other tasks in supporting their families to bring their children to the programs. This is linked to food insecurity and debt. Again, rejection from the program correlates with lack of awareness of the admission criteria and/or ineffective screening by VHTs. All of these indicate weak community mobilisation leading to what is called a “vicious cycle” in program coverage, whereby program coverage will not improve unless interventions are made.

The SLEAC Survey has established threshold coverage classifications for all seven districts in the Karamoja Region. Weighting exercises established that coverage is patchy across the region, with Moroto District having the lowest point coverage for both OTC and SFP Programs. Abim and Napak were highest for both OTC and SFP point coverage.

If we refer to figure 1 in the Methodology section of this report;



When coverage has been identified as low, a SQUEAC investigation is recommended to further investigate at the District or local level to provide detailed information on program coverage and detailed information on barriers to access.

A SQUEAC investigation is only suitable for investigating either OTC or SFP; they cannot be conducted for both at the same time. Following this model and the results from the SLEAC survey, it is recommended that SQUEAC Investigations take place for SAM and MAM separately. Resources permitting, SQUEAC investigations for areas of both high and low coverage could occur to allow for comparisons and contrasts in program performance and learning shared for program improvement.

Given the resources available at the time and the observations made by the investigators, Moroto District was the informed choice of the locality of the SQUEAC Investigation for OTC coverage.

SQUEAC - Introduction

This section of the report documents the findings of a Semi Quantitative Evaluation of Access and Coverage (SQUEAC) Investigation into the coverage of the CUAMM IMAM Program operating in the Moroto District of Karamoja. The district has a population of 104, 539¹⁴ with 20,908¹⁵ children under 5.

To date there has been no investigation of coverage, results from the SLEAC survey combined with the need to develop capacity with program staff in conducting SQUEAC investigations formed the basis for the assessment in Moroto. It is intended that the learning from this process will create awareness of coverage monitoring and will be built into nutrition programs to improve service delivery and will be rolled out across other districts and regions. A team of 11 participants made up of MoH and partner agencies staff (see appendix 2 for a full participant list) plus six enumerators with knowledge of the local area and the Karamojong language took part in the training and conducted the investigation. The SQUEAC investigation took place between 10th and 26th of February 2015.

The SQUEAC Assessment Design:

Is semi-quantitative, using a mixture of quantitative (numerical) data collected from routine program monitoring activities, small studies and small-area surveys as well as qualitative data collected using informal group discussions and interviews with a variety of key informants.

Makes use of routine program monitoring data (e.g. charts of trends in admission, exit, recovery, in-program deaths, and defaulting) and data that is already collected on beneficiary record cards (e.g. MUAC on admission)

Makes use of data such as agriculture, labour, disease, food-consumption, which may already be available from sources such as nutritional anthropometry surveys, agricultural assessments, livelihood surveys, and food-security assessments. It is also collected using informal group discussions and interviews with a variety of informants to inform a seasonal calendar.

Makes use of data that may already be collected routinely by programs or may be collected with little additional work.

¹⁴ National Housing and Population Census 2014 Provisional Results Revised Edition, UBOS, UNFBA.

¹⁵ Figured at 20% of total population of Moroto.

Uses small studies, small surveys, and small-area surveys to confirm or deny hypotheses about program coverage that arise from the analysis of program and qualitative data.

Uses Bayesian techniques to estimate overall program coverage with a small sample survey.¹⁶

Stage 1: Identification of possible areas of high and low coverage utilising routine program monitoring data. This is combined with qualitative data collection triangulated by source and method and sampled to redundancy.

Stage 2: Hypothesis constructed and tested using a small survey.

Stage 3: Wide area survey conducted to inform coverage estimate

Stage 1 - Investigation Process

The objective of Stage 1 is to identify areas of possible high and low coverage within the district and identify boosters and barriers affecting coverage using easy to collect routine monitoring and qualitative data. Analysis of quantitative data aims to establish trends on: admission rates, MUAC on admission, deaths, cured, defaulters and non- responders.

Quantitative Data

Data was extracted from the CUAMM routine monitoring data set for all OTP sites in the district. Additional monitoring data had to be collated by hand. MUAC on admission, length of stay (LOS) for defaulter and LOS for cured exits are essential components for a full trend analysis of program performance, again, these were not collated at the district or clinic level. Random samples of 8 of the 13 OTC sites in Moroto were selected, where observational studies were conducted with both registers and OTP cards checked for quality purposes during data collection. Although some trend analysis was conducted, the level of poor record keeping means this data should be treated with caution, however, it does allow for some insight into program activity.

¹⁶ Adapted 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>)

Program admissions

Data on admissions is an indicator for health treatment seeking behaviour; data for MUAC on admission demonstrates timeliness of admissions to the IMAM program.

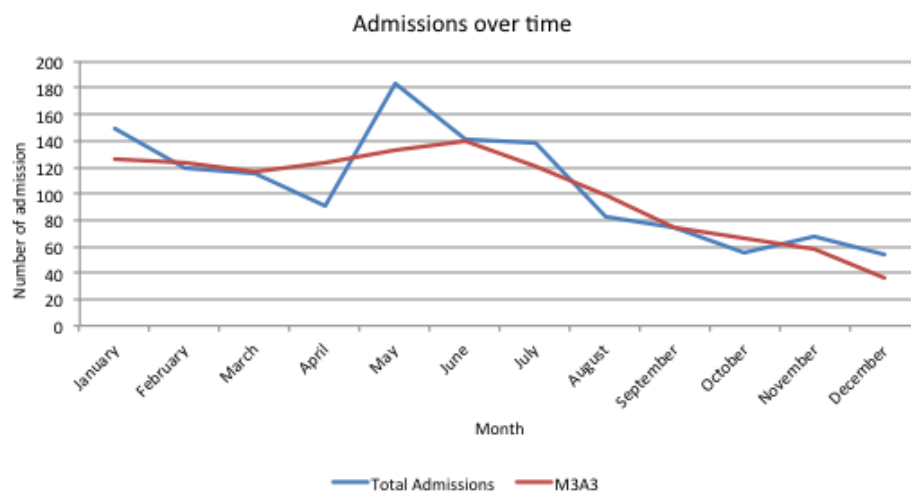


Figure 18. Admissions over time

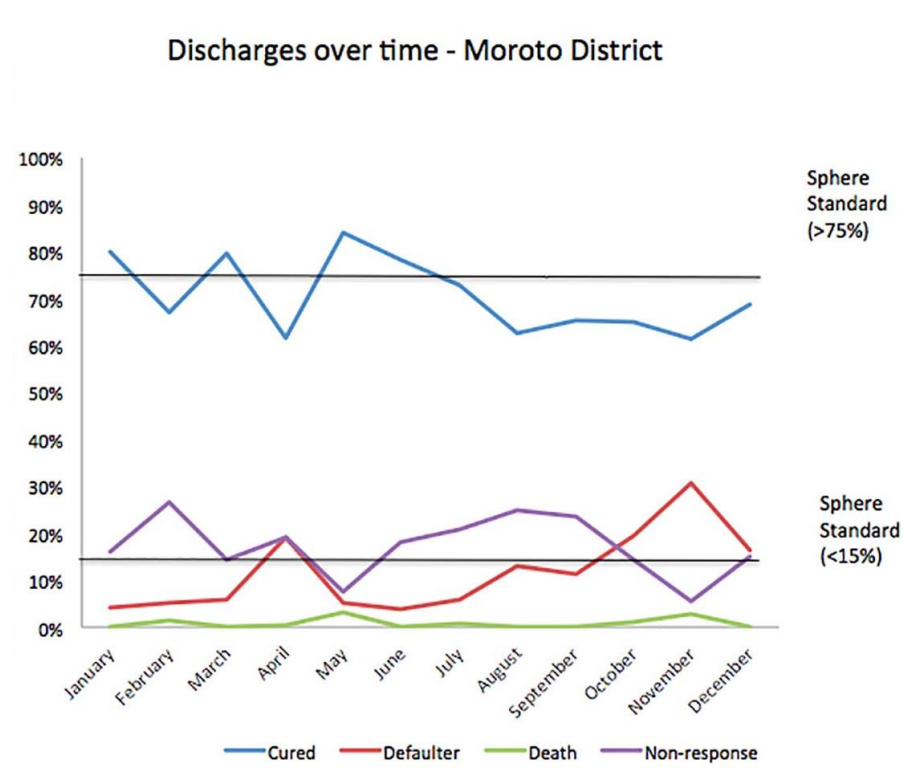


Figure 16. Exits over time

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Rainy Season	#			###								
Diarrhea	#			Diarrhea###						##		
RTI	##	###RTI			#			RTI###			##	
Malaria	#	###Malaria			##			###		#		#
Food Prices	#	#		###				#		#		
Agriculture	Agriculture				###			### Harvest		#		
Casual Labour	###		###					#				
Animal Rearing							###					

Figure 17. Seasonal Calendar

Admission trends demonstrate peaks in admissions in relation to events in the seasonal calendar; however, they also indicate a steady decline in admissions. This, in part, may be due to the lean period ending; however, it may also be a result of poor and inactive case finding and weak community mobilisation.

Information on the seasonal calendar was gathered during qualitative data collection with the intensity levels being recorded for certain times of the year.

The seasonal calendar allows trends to be identified, which correspond to certain events during the year. E.g. we can identify when peaks and dips in cured and defaulter rates coincide after the short rains. Cure rates drop as defaulter and non-response rates rise as the intensity of illnesses intensify in March and April, as does the demand for casual labour (opportunity costs). Similarly the cure rate drops as the defaulter and non-response rates rise during the lean period. We then see a peak, and then drop off in defaulting in October to November after the harvest, with more food being available in the homesteads.

MUAC on admission

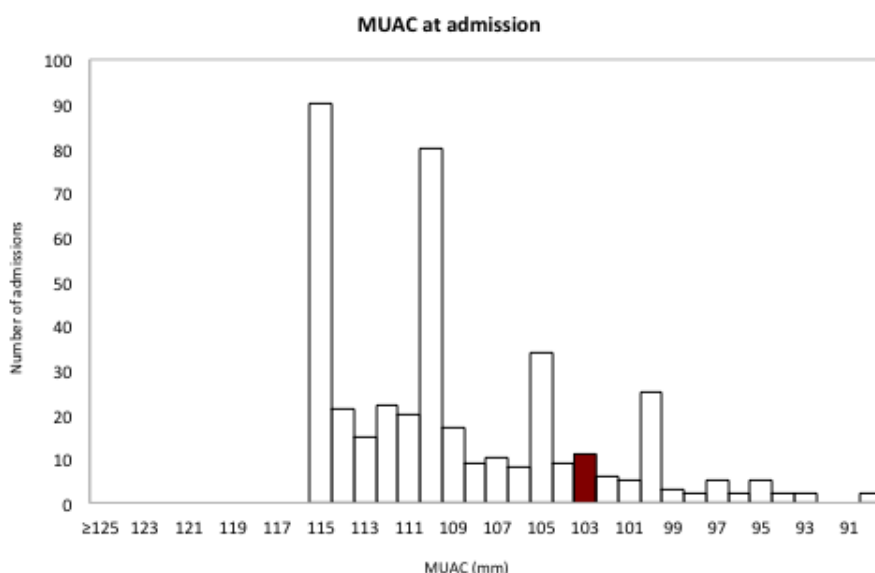


Figure 17. MUAC on admission trend

This graph represents data collected from 8 clinics. Whilst a good proportion are being admitted on the admission criteria of 115mm the mean admission is 103mm.

This would indicate late treatment seeking behaviour and/or poor active case finding in the community.

LOS for cured exit

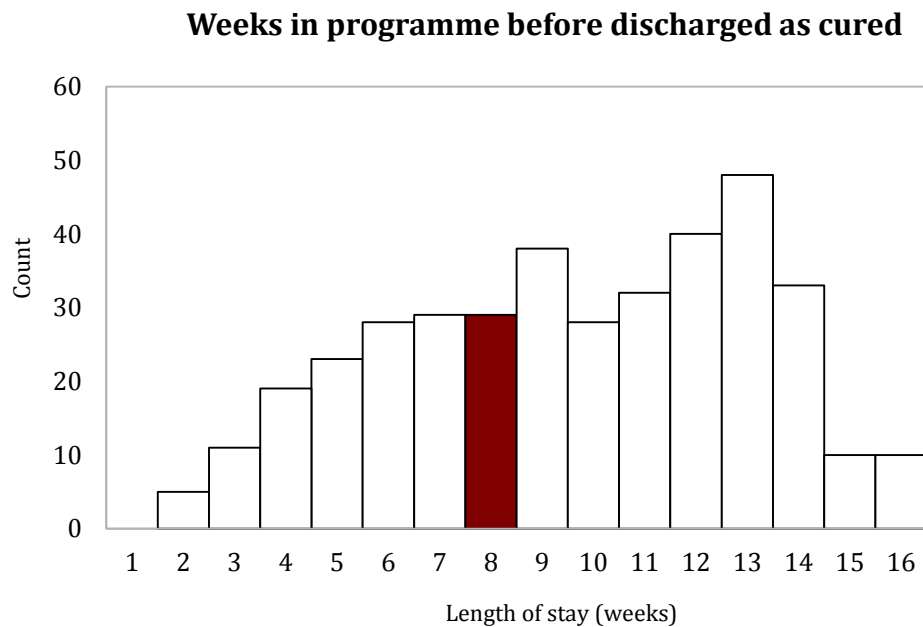


Figure 18. LOS for cured exits

The mean LOS for cured exits is 8 weeks, however the proportion staying longer than 8 weeks is of concern. This indicates long lengths of stay due to late treatment seeking behaviour, which correlates with the MUAC on admission data. Long lengths of stay in OTC programs can have negative impact on community opinions on the effectiveness of the program.

LOS for defaulter exit

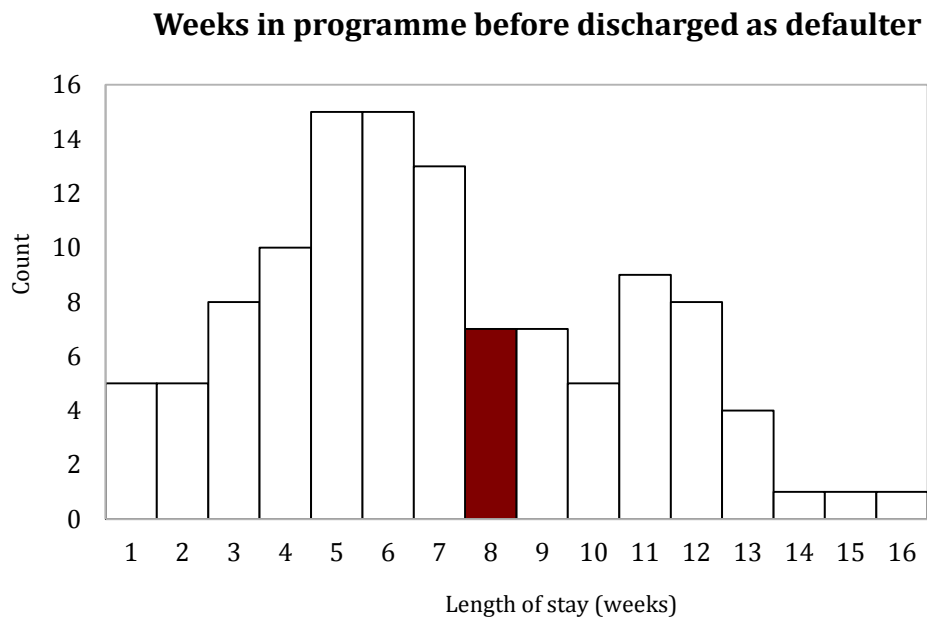


Figure 19. LOS for defaulter exits

The mean LOS for defaulters is 8 weeks. The numbers of those defaulting after 8 weeks are likely to be in recovery. However, those defaulting before 4 weeks are more likely to still be SAM cases. It is commonly understood that of those who default, approximately 30%, will not return to the program, which may mean hidden deaths are occurring.

Referral by type

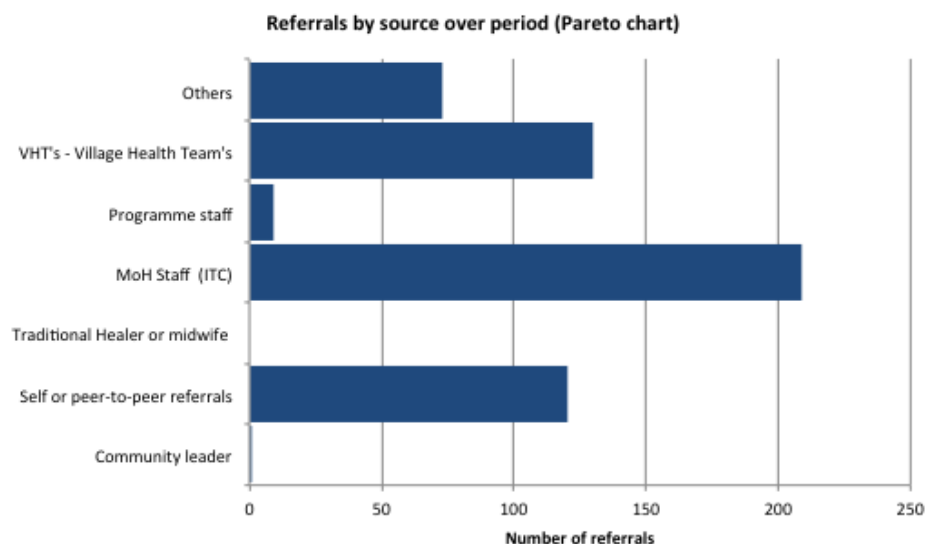


Figure 20. Referrals by Type

The highest level of referrals is by MoH staff in ITC referring back to OTC sites at almost 40% of all referrals. This indicates late treatment seeking behaviour that has led to complicated cases, which are seen in the ITC. Referrals by VHT's is the next highest at 24%. "Others" are referrals by SFP and other NGOs and transfers from

OTCs. Self and peer referral represent 22% of referrals made. This indicates that referrals are mainly made by program staff. The lack of community referrals demonstrates weak community mobilisation.

Qualitative Data

Qualitative data was collected using focus group discussions, individual semi-structured interviews and observational studies. Interview and focus group guides were used and adapted from previous SQUEACs and adapted to fit the local context with the main themes being: aetiology and terminologies of SAM, awareness of the program, perceptions/opinions of the program, pathways to treatment, case finding volunteer activity and reasons for uncovered cases. Key informants were identified within the community. The key principles of **triangulation** by **source and method** and **sampling to redundancy** were followed.

Data was collected through identified key informants and sampled from the district in terms of spatial diversity e.g. highlands and lowlands and communities closest and furthest from OTP sites. Data was organised utilising the BBQ approach, Boosters, Barriers and Questions. At the end of each data collection session the team returned to base for a plenary to discuss findings. These were identified and listed as either **boosters** or **barriers** to coverage with questions arising e.g. new issues for investigation listed as **questions** to be built into the next day's data collection. Data collection continued until **sampling to redundancy** was achieved e.g. no new data was collected.

A total of 57 semi-structured interviews and 48 informal group discussions were held during the qualitative data gather stage. 23 observational studies were also conducted. For a full break down of qualitative data gathering see appendix 3.

Table 4 represents the Key informants identified with their coding for triangulation. Table 5 presents the main barriers to access and coverage. For a full table of boosters and barriers see appendices 4.

Source & Methods for Qualitative Data Collection

Source	Method
1 Village Elders	Semi Structured Interview – A
2 Carers of beneficiaries in the program	Informal Group Discussion – B
3 Carers of beneficiaries not in the program	Observational Studies (14)
4 Men	
5 Pastors/Priests	
6 Imams	
7 LC1s	
8 Community Members	

9 TBAs
10 Traditional Healers
11 VHTs
12 OTP & MoH staff
13 Children
14 Observation Study
15 NGOs
16 Teachers

Table 4. Source and Method Codes

Barriers	Triangulation by source & method
Opportunity costs means mothers do not attend OTC services when they should, in some instances younger siblings are taking beneficiaries to the clinic.	12A 12A 4B 11A 9A 3A 12A 2B 12A 14 3C 7A 12A 2A 3C 12A 12A 11B 11A 12A 12A 11A 3C 12A 3C 5A 16B 4A 8B 12A 8B 4A 11A 8B 16A 11A 12A 13B 3B 1A13B 16B 12A 16B 7A 3B 14 11A 13A 4A 14 1A 3A
Lack of awareness of program increases defaulting, in some instances, it was reported that beneficiaries thought they had to pay for the service.	5A 16A 5A 9B 13B 16A 5A 3B 4B 16B 1B 12A 12A 16A 7A 7A 16A 4B 16B 4B 1B 8B 4A 8B 8B 12A 4B 2A 7A 4B 2A 16B 1A 7A 16A 11B 5A 4B 2B 5A 2B 2B
Late treatment seeking behaviour caused by factors such as preference to traditional healers.	4B 11B 4B 12A 3B 16B 4B 2A 5A 11A 1A 5A 3B 13B 1B 11B 4B 16A 3C 4B 16B 10A 8B 2B 2A 10A 3B 4B 11B 4B 11A 12A 13B 16B 13B 4A 8B 16B 1B 11A 8B 16A 1A
Long waiting time and poor hygiene at the health centre was observed	12A 12A 12A 12A 14 11A 11A 1B 5A 12A 3A 12A 16B 4A 11B 16B 4B 14 16A 7A 3B 14 14 16B 14 14 14 12A 7A 7A 16A 13A 3A 8B
Inappropriate messages reported by both Health Workers and members of the community, have led to a lack of community sensitisation concerning issues such as community perception of RUTF leading to death and/or diarrhoea	12A 12A 3A 4B 11B 7A 11A 5A 12A 7A 1B 3B 12A 2B 12A 11A 11A 1B 3B 8B 16B 4B 2B 2A 12A 2B 2B 3B 11B 11A
Long distances hinder access and utilisation of OTP services.	13A 16B 1A 4A 12A 4B 2B 11B 11A 11B 12A 4B 12A 3C 16A 13A 3B 8A 4B 3B 1B 12A 13B7A 5A 3B 12A 5B 9B
Food insecurity leads to double registration in the OTP program.	12A 12A 12A 12A 12A 12A 7A 16A 4B 12A 2B 12A 12A 3A 11A 7A 5A 8B 16B 3A 12A 3B 7A 4B 3B 7A 11A
Communities are not able to recognise signs and symptoms of malnutrition early leading to late admission and long stay in the program	12A 5A 12A 16B 4B 7A 3C 11A 12A 3B 4B 8B 7A 7A 4B 12A 14 11A 16A 16B 11A 12A 13B 14 16B 11A
Poor attitude of health workers has led to relapsed cases not returning to OTC facility.	3A 14 11B 12A 12A 4B 4B 2B 12A 7A 3C 16A 9B 1B 8B 4B 11B 13A 4B 7A 8B
The rainy season affects access to OTC sites.	2B 12A 14 16A 11B 4B 8B 11A 5A 12A 3A 12A 4A 1A 16B 3A 13B

Table 5. Barriers to Access and Coverage in Moroto

Summary of Boosters and Barriers by the SQUEAC team

People from the Community

Understanding of common childhood illnesses:

The community and health workers are generally aware of the common childhood illnesses such as malaria, respiratory tract infections, diarrhoea and jiggers among others. They are able to tell the signs and symptoms of each illness, rank the common illnesses, tell when they are most prevalent and they know where to seek treatment (health facilities and traditional healers). However, there is a high preference for traditional healers.

Understanding of malnutrition:

The communities visited understood the causes, signs and symptoms of malnutrition, where to access the services and how the program operates. This is due to CMAM interventions by partners, health workers, VHTs and some leaders in the community. These among others include: screening in the community, and management at the health facility. Because of poverty, seasonal changes and negative attitude, communities have a preference to traditional healers as the first point of treatment before reaching the health facilities. Some communities relate malnutrition to HIV.

Awareness of treatment services

Generally the community and health workers are aware of the OTC services offered and the various health facilities where they can receive these services. They know that RUTF is the medicine provided as part of treatment, although there is reported misuse of RUTF through selling and household sharing. There are also some misconceptions around utilisation of RUTF where carers believe it causes diarrhoea or death.

Despite a relatively good level of awareness, there are gaps in community sensitisation about the program. This has resulted in late health treatment seeking behaviour and preference for traditional healers.

Program Coverage

The findings indicate that there are some children who have malnutrition but are not going for the treatment. This has been attributed to the following factors:

- There is an issue of opportunity cost, mothers have conflicting activities that prevent them from taking their children e.g. stone quarrying, looking for firewood, charcoal burning, going to town to buy locally brewed alcohol to sell.
- Long waiting times at health facility causing dissatisfaction.
- Long distance covered to reach the health facility in some of the more remote villages.

- Stigma: that malnutrition is associated with HIV, being called a careless mother and negative opinions about nutrition screening at the community level.
- Seasonal changes, especially during rainy season when the floods cut off the roads.
- Poor attitude of the staff towards carers which has led to mothers not wanting to return to the service.
- Preference of traditional healers to health facility as mothers associate malnutrition with witchcraft which leads to late health treatment seeking behaviour
- Inadequate screening by VHTs leads to some eligible children being excluded
- Fear of rejection at the facility leads carers not taking their children.

Perception of the service/IMAM and defaulting

The community and health workers appreciate the IMAM service and appeal that the program continues, because it has a positive impact on the health status of malnourished children. Most communities are knowledgeable about the signs of malnutrition, which has increased admissions. Although some carers are knowledgeable about malnutrition, the aspect of defaulting does not make sense to them. As a result this has a negative impact on the program, leading to poor record keeping.

Program Staff

The community recommended an improvement in the continuity of nutrition services to children, however, community sensitisation needs to be increased. Staff participate actively in IMAM programs and are aware of childhood illnesses associated with malnutrition. Poor record keeping is a result of a lack of trained staff participating in IMAM activities, which affects effective program monitoring. Lack of community mobilisation affects program coverage; as a result, there is poor awareness of what the program entails. VHTs are an integral part of the IMAM program that should not be overlooked but incorporated into on-the-job coaching to improve coverage. This will eliminate lack of motivation of VHTs and poor record keeping.

Concept Mapping

Concept mapping is a graphical data-analysis technique that is useful for representing relationships between findings. Concept-maps show findings and the connections (relationships) between findings in terms of **boosters** and **barriers** affecting coverage and are used to organise and analyse data.

This exercise was conducted with the team, who had been divided into four groups, each constructing individual concept maps. Each team then fed back their findings. The relationships between boosters and barriers were discussed and consensus was gained.

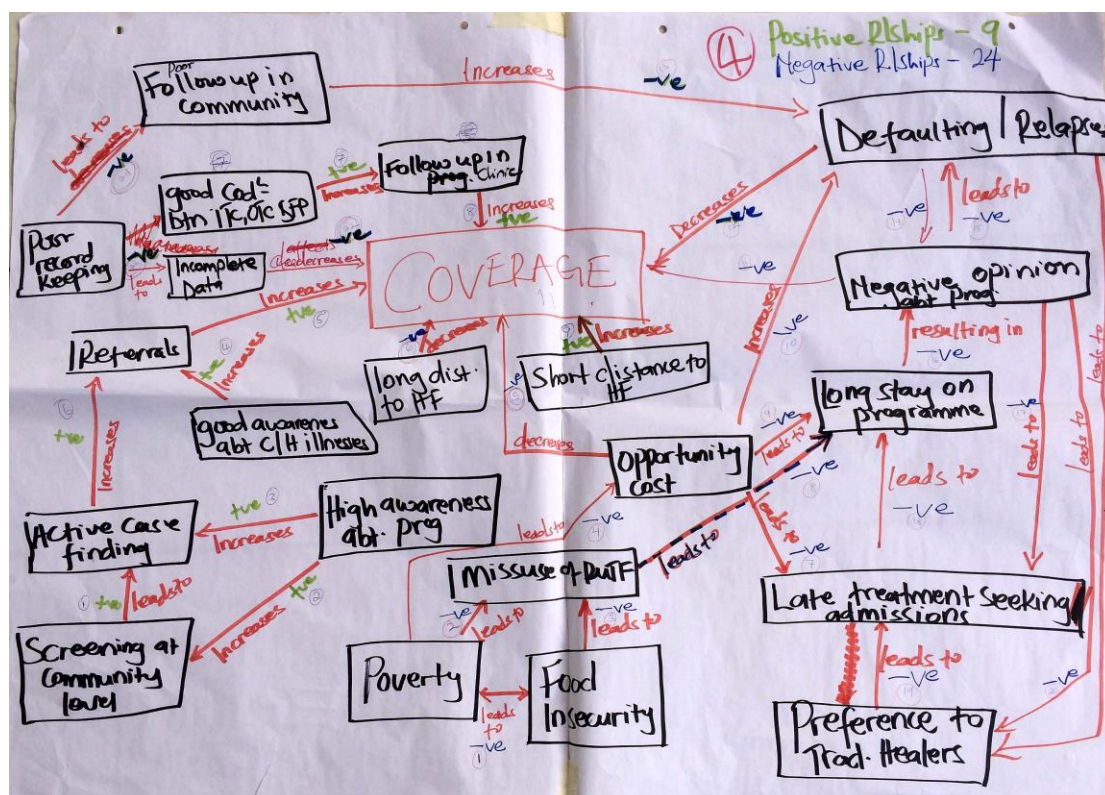


Figure 20. Concept Map.

Stage 2. Hypothesis construction and testing

The barriers obtained from the interview of key informants, through triangulation by source and method, identified opportunity costs as having the greatest impact on coverage in Moroto District. Based on this, the hypothesis was set to test the impact

of opportunity cost on coverage. Testing a hypothesis is a way of validating findings in Stage 1.

Hypothesis:

1. Villages where there are high opportunity costs will have low coverage
2. Villages where there are low opportunity costs will have a high coverage

Villages selected:

High Coverage	Low Coverage
Kopoe	Aworobu
Lokeriaut	Kadilakeny

Table 6. Villages selected for Hypothesis testing

Results:

Village	SAM Covered	SAM uncovered	Calculation (round down)	Result
Aworobu	3	7	$D = 10/2 = 5$	3 is less than 5, thus low coverage
Kadilakeny	1	2	$D = 3/2 = 1.5$	1 is not greater than 1, thus low coverage
Kopoe	0	1	$D = 1/2 = 0.5$	0 is not greater than 0, thus low coverage
Lokeriaut	1	4	$D = 5/2 = 2.5$	2 is not greater than 2, thus low coverage

Table 7. Results of Hypothesis Testing

On testing the hypothesis, the coverage was reported to be low in all villages selected. In Kopoe and Lokeriaut with expected less opportunity cost, results of the active and adaptive case finding showed, at the time of the assessment, the mothers of all the uncovered SAM cases found in these areas had gone to seek casual labour. These mothers were involved in charcoal burning and collecting firewood. Group discussion with the team led to consensus that, although this was not the expected finding, this in fact explains that opportunity cost has impact not only in villages near urban and mining sites, but even in rural settings, thus, reinforcing our hypothesis. For this reason, it was agreed that we did not need to retest the hypothesis but rather move on with the investigation.

Stage 3. Wide Area Survey - Establishing the Prior

The SQUEAC method uses a Bayesian technique (Beta-Binomial Conjugate Analysis) to estimate program coverage. The prior probability density (the *prior*) is created by

considering routine and qualitative data, (organised and analysed and scored as described below). The process of defining the prior starts with a uniform probability for all coverage proportions between 20% - 80% e.g. the range of typical coverage proportions on the majority of IMAM programs. The prior is then shaped by considering both the routine and qualitative data collected, working up from 20% and down from 80% with limits defined by the team's "informed belief" about the program. The **prior** was established from a mode of four priors using triangulation by method; these consisted of: histogram of belief, BBQ unweighted, BBQ weighted and concept map scores.

Histogram of belief

A histogram prior was developed based on the teams belief that coverage could not be below <20% and or above >60% due to the barriers presented. The mode of the histogram was **35%**. It is best practice to establish a conservative prior when no previous estimation has taken place.

Weighted Boosters and Barriers

The investigation team went through the boosters and barriers as a group and scored each from 1 to 5, 5 being of most importance and 1 the least in terms of their effect on coverage. The mean value of the two was then calculated using the formula below, this being **45%**.

$$\text{BBQ weighted:} = (\text{Boosters-Barriers}) + 100/2 = (49+100)-60/ = 45.5(\text{round down}) \\ = \mathbf{45\%}$$

$$\text{BBQ Unweighted} = (17+100)-20/2 = 48.5 (\text{round down}) \\ = \mathbf{48\%}$$

Concept Maps Scores

Concept map scoring follows the same formula. For Moroto, we had 4 concept maps, and therefore, an average of all the scores was taken:

$$= \frac{34+52+37+42}{4} = \mathbf{41\%}$$

Triangulation of PRIOR

Take the four prior results from each exercise

BBQ weighted	48%
BBQ unweighted	45%
Concepts maps	41%
Histogram of belief	35%

$$= \frac{48\%+45\%+41\%+35\%}{4} = \mathbf{42\%}$$

The **Prior** is the informed estimation of program coverage using both quantitative and qualitative data to inform it. Data is collected and analysed in **Stage 1** and

validated in **Stage 2**. Using the Bayesian Coverage Estimate Calculator, the **prior estimate** is established at **42%** (alpha 14.1, beta 20.1)¹⁷.

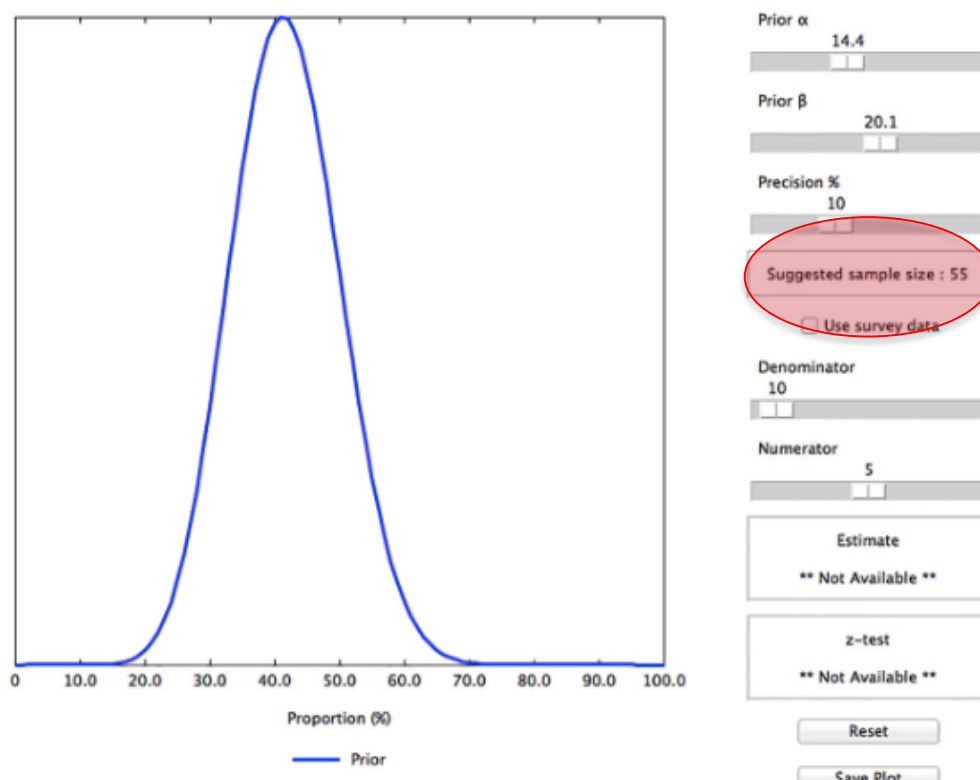


Figure 22. Prior Mode

Sampling for Stage 3

The Bayesian SQUEAC Calculator establishes a suggested sample size for the large area survey. The calculation for village sampling is conducted as per fig 4 in the SLEAC Survey. For the villages sampled see appendices one. The results of the SLEAC survey are the wide area survey, Stage 3 of the SQUEAC Investigation.

Results

Active and Adaptive Case Finding Results

Key Informants identified in Stage 1 were used for active and adaptive case finding. Table 8 presents results of case finding activities. **This data forms the likelihood.** **Likelihood** data are the results of the wide area survey.

SAM cases	SAM cases in the program	SAM cases not in the program
62	19	43

Table 8. Results for wide area survey in Moroto

¹⁷ 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>), p.83

Results of the case finding activities were entered into the Bayesian Coverage Estimate Calculator. **Posterior** coverage was established to be; **34% (95% CI= 24.4 % - 43.9%)**. **Posterior** coverage is calculated using both **prior** and **likelihood** data and results in the estimated **posterior** coverage using a Bayesian technique (Beta-Binomial Conjugate Analysis).

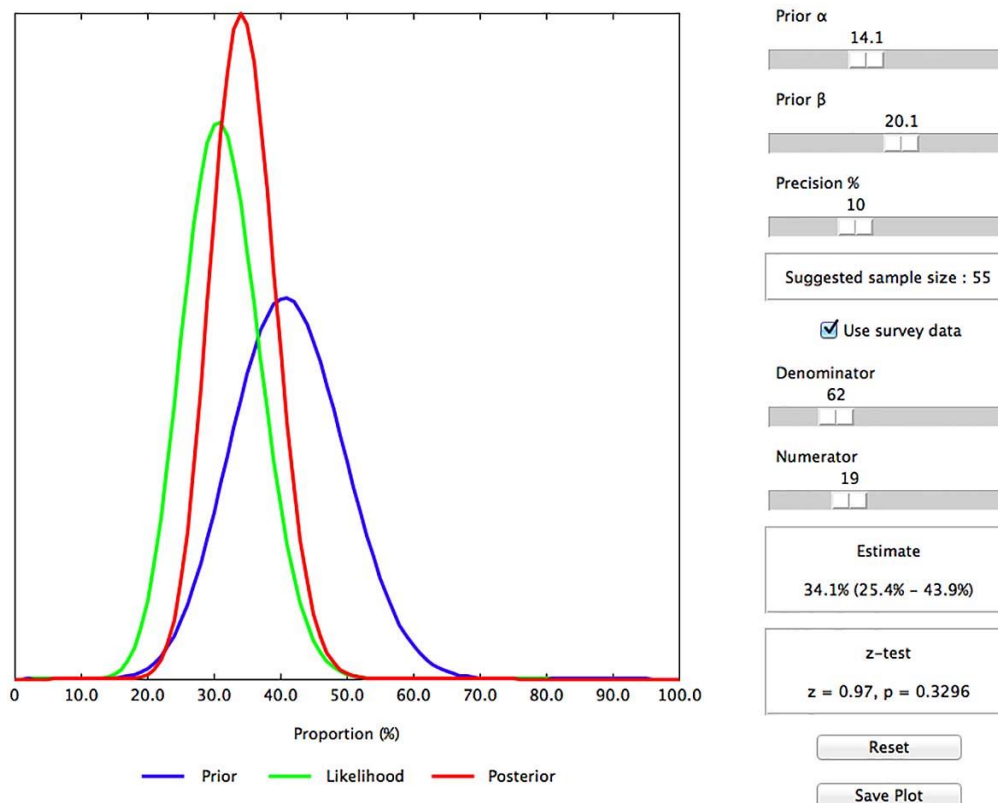


Figure 23. Bayes Coverage Estimate

There is considerable overlap between the prior and likelihood, they do not conflict. The prior of 42% is accurate and reasonably strong; therefore the posterior estimate of 34% is accurate. The posterior distribution is narrower than the prior telling us the likelihood survey has reduced uncertainty.

Conclusions & Recommendations

A coverage estimation of **34% (95% CI= 24.4 % - 43.9%)** is below the Sphere minimum standard of 50% for IMAM services in rural settings. This finding indicates the lack of an effective community mobilisation strategy in Moroto District. For this to occur a community mobilisation assessment needs to take place. This will need to identify existing community activities and any planned activities, e.g who is doing these, when and where? Existing community communication channels need to be

explored and identified, especially concerning social diffusion with regard to appropriate and relevant sensitisation messages to raise awareness of the program, malnutrition and the services available.

Ways of improving sensitisation needs to take place. The preference of traditional healers is well documented. Both traditional healers and other actors, including men should be included in the community mobilisation strategy.

Opportunity costs for carers of beneficiaries are a highly reported barrier to coverage. The effect of harmonisation of OTC days to one day a week needs to be explored within “the context specific factors that affect opportunity costs for mothers” recommendation made below. Mothers/carers of beneficiaries have high demands on their time, whilst harmonisation of OTC days is a strategy in reducing double registration, ways of reducing opportunity costs for mothers needs to be explored. Having OTC on different days could allow mothers to attend on a day that coincides with other activities, e.g. market day. By default, having OTC limited to one-day means everyone must attend on the same day, is this increasing workload for staff and increasing waiting times for mothers? The integration of OTC into everyday health care could reduce the number of beneficiaries attending on any one day.

Defaulters and relapse rates cannot effectively be monitored, preventing effect monitoring and trend analysis. LOS for cured and defaulters are not currently recorded. As has been documented, record keeping at the facility level is poor. The standardised tools for data collection need to be amended to facilitate effective monitoring.

The following tables outline specific recommendations with a logistical framework for conducting activities to improve service delivery in Moroto District.

Recommendations

Recommendation	Rationale	Evidence	Source
There is need to further investigate the context specific factors that affect opportunity cost for mothers in the district.	Opportunity cost affects the ability of mothers to bring children to OTCs and increases defaulter rates	- The number of villages visited in the survey where mothers were found to be absent and engaged in income generating activities like stone quarrying, charcoal burning and casual labour away from home - The number of children found in care of younger siblings and elderly relatives was high - Reports of children brought to OTC clinics by younger siblings and turned away by health workers	12A, 4B, 11A, 9A, 3A, 14, 4A, 2B,3C,7A,13B,16B, 5A, 8B, 16A, 1A
Community sensitization on; - IMAM, - Childhood illnesses - Health and nutrition education	Communities are not able to recognise the signs and symptoms of malnutrition early enough leading to late admission and long stay in the program Some mothers refuse for their children to be screened, referred, transferred or discharged because they are not aware of the program admission/discharge criteria Widespread misconceptions about the use of RUTF were reported by health workers and the community	- Stigma for screening was reported by mothers; they associated OTCs with HIV/AIDs - Some carers reported that they thought they had to pay for the services - Health workers reported that mothers refused to be discharged and transferred - Some mothers reported that their children were rejected by health workers when referred by VHTs - Communities didn't understand the effects of defaulting on their children - Late treatment seeking behavior - Long stay on the program	5A, 16A, 9B, 13B, 3B, 4B, 16B, 1B, 12A, 7A, 8B, 4A, 2A, 1A, 11B, 2B, 3C, 11A, 14

	There was a high number of children suffering from childhood illnesses	• RUTF used to supplement household food sources • RUTF sold as a source of income • RUTF given to other family members who are not admitted in the program • Reported misconceptions that RUTF causes diarrhoea/death • Inadequate knowledge on common childhood illnesses by the community	
Recruit and train more health workers and VHTs on IMAM and communication skills	Due to inadequate staffing, it was generally observed that there was a lack of staff availability, and staff were overwhelmed by the work load leading to long waiting time for OTC clients and this has led to increases in defaulting. The poor attitude of health workers has also led to fear among mothers whose children have relapsed in coming back to the health facilities. Some health workers had inadequate knowledge and skills on management of acute malnutrition	• It was observed that mothers attending OTC had to wait for over 2 hours before being attended to. • Health workers assigned to OTC clinics also had to perform their routine duties at the health facility • Rejection of clients referred by VHTs at the health facility • Poor attitude of health VHTs towards some clients • Poor communication between VHTs and health workers • Some health workers have never been trained on IMAM	12A, 14, 11A, 1B, 5A, 3A, 16B, 11B, 4A, 4B, 16A, 7A, 3B, 13A, 8B, 2B, 3C, 9B
Strengthen Monitoring and Evaluation for IMAM	Most of the health facilities had poor record keeping, including missing data and discrepancies between registers and monthly reports. This prevents effective monitoring and evaluation of the program	• Poor record keeping (missing data and discrepancies) in all clinics where data was checked	14 12A

There is need to investigate the role that traditional healers can play in child health promotion in the community and devise strategies for engaging them to improve program coverage	It was reported that communities preferred traditional healers as the first point of care resulting in late health seeking behaviour and long stay on the program. It was reported carers of beneficiaries, after defaulting from the program, sought out THs	• Preference of traditional healers to modern medicine • Communities reported traditional healers provided first aid for SAM cases • Some mothers also reported that when children stayed long on the program, they sought the help of traditional healers • Health workers in ITC reported that carers defaulted with children to seek help from traditional healers	4B, 11B, 12A, 3B, 16B, 2A, 5A, 11A, 1A, 13B, 1B, 16A, 3C, 10A, 8B, 2B, 1B, 4A, 7A
Integrate OTC in the routine outreach activities such as ANC, Family planning, Vaccination amongst others	Due to long distances, mothers are not able to access and utilize OTC services. OTC can be integrated into routine outreach sessions to increase coverage	• Long distances from the health facilities • Seasonal changes	12B 16B 1A 4A 12A 4B 2B 11B 11A 3C 8A 16A 1B 13B 7A 5A 3B 9B
Strengthen follow up at community level	There is limited follow up on clients discharged from the OTC, increases number of defaulters and relapses. VHTs also lack referral slips	• Lack of referral slips • High default rate and relapses	12A, 7A
Strengthen the harmonized distribution days and time	Due to poverty, mothers tend to register their children in more than one health facility and also refuse to be discharged or transferred to other OTCs because they want to obtain more RUTF than recommended	• Double registration • Poor record keeping • Sharing and selling of RUTF • Poverty • Food insecurity	12A 7A 16A 4B 2B 3A 5A 8B 16B 3B 11A 3C 1B 13A
The use of alcohol in the community is at such a level that warrants further investigation to establish severity of the problem	Alcohol abuse/heavy use of alcohol in mothers and children	• Selling/exchange of RUTFs for alcohol and tobacco contributing to malnutrition	7A 11A 16B 14

Logical Framework: Moroto District

Activity	Purpose	How	Monitoring	Evaluation	Frequency
Investigation of context specific factors that affect opportunity cost for mothers in the district	- To increase admissions where uncovered children are absent from the program when mothers are not at home - To decrease defaulter rates	Identify areas where opportunity cost are high and explore the option of mobile clinics and outreaches	- Number of mobile clinics/outreaches - Number of admissions - Number of defaulters	- Increase in admission rates in places where opportunity costs are high - Decrease in defaulters	- Monthly - Quarterly
Strengthen Community sensitisation about IMAM program, childhood illnesses, health and nutrition	- Increase awareness of IMAM services - Increase admissions - Decrease defaulters - Increase awareness of childhood illnesses - Increase early treatment seeking behavior - Improve on good hygiene practices	- Health education at all health service provision points - Target young children with health and nutrition messages - Mobilize communities for Maternal Newborn and Child Health (MNCH) services - Community dialogue with community leaders, THs, health workers/VHTs and the community - Formation of peer support groups to follow	- Health education schedule and number of sessions given - Number of young children reached with nutrition messages - Increased number of communities accessing and utilising MNCH services - Number of meetings conducted in the community - Peer support groups formed and sensitised	- Increased screening - Decreased defaulters - Early treatment seeking behavior as indicated by MUAC on admission - Decrease in relapse rates - Minutes on dialogue - Number of functional peer groups - Schedule and list of topics aired	- Monthly - Quarterly

Activity	Purpose	How	Monitoring	Evaluation	Frequency
		up and sensitise fellow mothers/carers • Radio talk shows and spot messages on nutrition • Community music and drama sessions	• Number of radio talk shows and spot messages aired • Number of drama shows	• Number of drama sessions	
Recruit and train more health workers and VHTs on IMAM and communication skills	• Increase the number of staff • Improve the knowledge and skills of health workers and VHTs on IMAM • Improve health worker attitude towards clients • To improve coordination and communication between health workers and VHTs	• Recruit more health workers • On the job training and mentorship • Conduct CMEs • Regular support supervision	• Number of staff recruited • Number of on the job training and CME sessions • Number of support supervision visits	• Increased number of staff • Decrease in waiting time at the facility • Mentorship and CME reports • Support supervision reports	• Monthly • Quarterly
M&E training on IMAM for health workers	• To improve on record keeping for IMAM (completeness and accuracy in the various data collection tools) e.g. regular recording of	• Identify the health workers to be trained • Conduct training on M&E for IMAM • Quarterly on job support supervision	• Number of health workers trained on M&E for IMAM • Number of on job sessions • Number of support supervision visits	• Complete data entries • Timely discharges • Reduced discrepancies between registers and monthly reports	• Daily • Weekly • Monthly • Quarterly

Activity	Purpose	How	Monitoring	Evaluation	Frequency
	MUAC on admission, date & criteria of discharge			- Quality of monthly reports (improved) - Support supervision reports	
Mobilise and sensitise traditional healers on childhood illnesses and the IMAM program	Increase the involvement of traditional healers in the identification and referral of children to the health facilities	- Sensitise traditional healers on CMAM services - Involve traditional healers in community dialogue	- Number of traditional healers sensitised - Number of traditional healers involved in nutrition community meetings	- Increased referrals by traditional healers - Increased number of traditional healers in community meetings	Monthly
Integrate OTC in the routine outreach activities such as ANC, Family planning, Vaccination among others	- Reduce distance to the health facility even when seasonal changes occur (rainy season) - Improve on utilisation of OTC services	- Facilitate health worker transport and SDA to conduct outreach sessions - Provide logistics and supplies for OTC (MUAC tapes, RUTF, registers, ration cards and referral forms)	- Number of outreach sessions conducted - Number of clients screened and registered in the program	- The number of clients accessing and utilising OTC services - Reduced number of defaulters - Improved coverage (SQUEAC)	- Monthly - Annually
Strengthen follow up at community level	To create a linkage between facility and community	- Provide referral forms to the VHTS - Conduct OTC clinics on the same day and time to reduce double	- Availability and usage of referral forms by the VHTs. - Number of feed-back meetings conducted	- Number of completed referral slips at the OTC - Number of clients followed up within the community	Monthly

Activity	Purpose	How	Monitoring	Evaluation	Frequency
		registration and reduce the misuse of RUTF • Have adequate well trained number of staff in the clinic Promote counter referral and feed- back between the health facilities and the community			
Strengthen the harmonized distribution days and time	• Prevent double registration • Reduce on the misuse of RUTF • Reduce on heavy workload • Decrease waiting time for carers	• Conduct OTC clinics on the same day and time to reduce double registration and reduce the misuse of RUTF • Have adequate well trained number of staff in the clinic • Conduct regular support supervision	• Check record cards • Number of trained health workers stationed in OTCs • Increase support supervision visits to health facilities	• Up to date records on client registration (Data Base) • Number of trained health workers in OTC • Number of support supervision visits with reports	• Monthly • Annually (or as appropriate) • Monthly/Quarterly
Carry out an in-depth study /Investigate the severity of alcohol problem in the community	• To establish the relationship between alcohol consumption and malnutrition	• Conduct a study on causal relationship between alcohol consumption and	• Study conducted	• Study findings/results on relationship between alcohol and malnutrition	• Annually

Activity	Purpose	How	Monitoring	Evaluation	Frequency
		malnutrition among communities		Implementation of study findings	

Debriefing Meetings

For the purpose of sharing preliminary findings and to meet specific objective 3;

In collaboration with key partners and the MoH develop specific recommendations to improve acceptance and coverage of the program

Two debriefing days were held with key stakeholders, one in Moroto on the 27th February and one in Kampala on the 3rd March 2015. (These two, one day debriefing sessions are currently being written up by ACF UK and will be published as a separate paper that will be available shortly). Participants consisted of key stakeholders from the local, regional and the national level at both debriefings.

On the basis of the preliminary findings presented participants were asked to work in groups and build three recommendations for improving coverage at the:

- Strategic level
- Organisational level
- Community level

The following are a set of recommendations developed over the two days from Moroto and Kampala respectively:

Moroto Recommendations:

Strategic:

- Adopt a multi-sectoral approach for nutrition and capacity build in other departments other than health through incorporation of budget lines into other sectors, strengthening advocacy and lobbying, coordination and policies for nutrition interventions, and through dissemination and publicising of nutrition policies and guidelines such as UNAP, IMAM and IYCF.
- Develop a MoH policy that every health worker receives training on IMAM, with IEC materials on simplified and comprehensive IMAM guidelines and tracking tools translated into local languages and disseminated at all levels. Research should be integrated into IMAM programing to utilise data collected.
- Develop an indicator for IMAM coverage and access at national and district level, to be included in the National Action Plan. Mainstream and strengthen the implementation of nutrition activities into district and facility work plans

with an operational DNCC, whilst overseeing and coordinating more effectively the activities of NGOs to avoid duplication and ensure accountability.

- Identify an agency to work in collaboration with MoH on monitoring coverage on IMAM, with an annual SLEAC/SQUEAC, and to strengthen coordination among implementing partners to maintain quality and avoid duplication.
- Make it policy to recruit and train more HWs and print and disseminate revised IMAM tools.

Organisational:

- Capacity building and recruitment of new staff should be paired with continuous training and on the job mentorship for all HWs and VHTs on IMAM. M&E should be strengthened and emphasised at health facilities through refresher trainings, mentorship and support supervision with quarterly performance reviews. A streamlined, uniform IMAM system will support this, with a log framework at each health facility in place.
- Strengthen the integration and coordination of nutrition services into routine health activities and between partners at all levels of service delivery (community, health unit, implementing partners, DHTs). Integration includes a supported referral system with follow up of cases by HWs and VHTs.
- Improve coordination between development partners and local government through the formation of a functional nutrition and health coordination committee that will hold regular sector working group meetings where SQUEAC reports are disseminated. Districts should advocate for resources to conduct SLEAC and SQUEAC assessments.

Community:

- Promote ownership and participation of IMAM through integration of nutrition topics in community dialogues and with pre-existing peer groups, and through community mobilisation and sensitisation with VHTs, FSGs, MCGs, MAG, male and female elders, religious and political figures.
- Government should take charge of community based service providers, which includes the capacity building and strengthened supervision of community resource persons. The government should also ensure that the community know about, and have access to services, as per their rights.
- Male involvement in nutrition interventions at the household level should be strengthened by using Elders, LC1s and Religious leaders.

- Integrated interventions at the community level should include the promotion of livelihood programs such as the scaling up of kitchen demonstration gardens in homes and the community. Other suggestions include the introduction of the community scorecard for IMAM program.
- Strengthen early detection through active case identification and referral at the community level through VHTs, MHGs and HWs.

Kampala Recommendations:

Strategic:

- Build a cohort of SLEAC/SQUEAC trained MoH, agency and district staff, at both national and regional levels, ensuring coordination at leadership and technical levels. SLEAC/SQUEAC methodology should be integrated into the existing national nutritional technical team to promote leadership and ownership.
- MoH to take the lead on the integration and costing of SQUEAC/SLEAC in to Monitoring and Evaluation of IMAM policies and budget, with the methodologies specifically adopted in malnutrition prone areas.
- Add a SLEAC/ SQUEAC toolkit to the MoH E-library whilst the creation of a national SQUEAC/SLEAC database should be linked to the national DHIS2.
- A specific organisation to take the lead on the coordination of SQUEAC/SLEAC roll out, working with international partners to booster M&E activities and to strengthen capacity to implement methodology at all levels.

Organisational:

- Commitment and mobilisation of resources from partner agencies to implement, integrate and scale up SQUEAC/SLEAC methodology into program design and the M&E toolbox, with coverage to be used as a key reporting indicator and as part of a strategic result framework.
- Orientation on data management and data monitoring by nutrition service personnel.
- Establish a regional support supervision team with key focal points for SLEAC/SQUEAC at national and district level, who can aid the retraining of health workers or train untrained health workers.
- Agencies including MoH stakeholders to take recommendations into consideration and use SQUEAC results to design BCC.

- Conducting SQUEAC every two years.
- Conduct research on effectiveness of approach.

Community:

- Continue strengthening of community sensitisation and awareness of malnutrition through community mobilisation across key actors, such as VHTs, community leaders, religious leaders and traditional healers, whilst linking IMAM to community support groups and promoting ownership of IMAM at the community level.
- Strengthen VHT referral systems through holding regular VHT systems (quarterly) and addressing VHT functionality through incentives.
- Consider the need for an M&E focal person at the nutrition unit, with an emphasis on reporting and feedback.
- Implement BCC interventions identified from SQUEAC and consider, with caution, mobile clinics in hard to reach areas.

Appendix One. PSUs for SLEAC & SQUEAC, Karamoja

District	Village
Moroto	Aworobu
	Nangorikipi
	Kopoe
	Nakapelimen B
	Katanga A
	Lonyilic A
	Lopelipel A
	Kothirio C
	NakamolWaret C
	Kochunoi
	Natopojo
	Naturumurum B
	Nabuin
	Apurichino A
Napak	Kadacar
	Naturumuru
	Nawatom
	Nariamiriam
	Namorotot
	Lokiloli
	Nakapelimen
	Adipala
	Nabinyonoit
	Kamera
	Kalesa
	Loparipar
	Nakatiyat
	Arengepua
	Losonyoka
	Komo
	Naitakosowan
	Angaro
	Namoruongora
	Locholi
	Lochella
	Lokuwas
	Logolei
	Napeipelu

	Natirae
	Loputuk
	Lopiida A
	Nasike
	Narege
Kaabong	Kariwonyanle
	Lobelina
	Nakorichokei
	Komolichter
	Lowala
	Kamacharikol
	Nakore
	Nangolecua
	Naryamoi South
	Natipemu
	Kakutatom
	Kotome
	Kakamar
	Lochom
	Nakiturituret
	Rupa B
	Napeikidori
	Loitugat
	Loguto
	Lokuo
Abim	Loc Ken
	Obangangeo Mission Ward
	Yanglemi East
	Gangming Central
	Gulopono east
	Lotukei TC
	Alir
	Gulonger West
	Apeipopong
	Otalabar West
Amudat	Lomerpus
	Loborokocha
	Kapanyirit
	Morut
	Namosing
	Kongorok
	Natiira B
	Kanareyon

	Katabok A
	Kariwo
	Karisamojong
	Motui
	Kakalya
	Naremit
	Kachiroi
	Kakres (loburin ward B)
	Tingas
	Motany
	Nakwangamoru
	Korenyang
	Moruarengan
	Cheptuyis
	Katukumwok
	Akuruwayan
	Chesiron
	Abongai
	Akule
	Karengeboche
	Kalokotio
	Kangenoi
Nakapiripirit	Longoleyek
	Lonangat
	Lowalangor west
	Lowalangor east
	Lokale
	Apeichoroit
	Lochowankalei
	Moropus
Kotido	Lopedot
	Lotome
	Loriu
	Lomukura
	Lodera 2
	Kesimen
	Lokatap
	Naapong
	Namoniek (Lominit)
	Nabwalin
	Kogole West

Appendix 2. SQUEAC Assessment Participant List

Name	Organisation
Wamala Julie	MoH NRH Mulago
Claire Kimurah	ACF-Uganda
Susan Baguma	Makarere University School Public Health
Ruth Babirye	IBFAN Uganda
Toko Mansur	MoH RRH Jinja
Susan Awori	MoH NRH Mulago
Eric Ssebunnya	ACF-Uganda
Ogwang Daniel	Abim DLG
Narus Regina	Napak DLG
Mote Koma Edemu	MoH, Moyo
Onyango Gerald	IBFAN Uganda
Issac Ochan	Enumerator
Akidi Jennifer	Enumerator
Akech Agnes	Enumerator
Acheng Schola	Enumerator
Adur Grace	Enumerator
Aleper Solomon	Enumerator

Appendix 3. Qualitative Data- SQUEAC

Stage 2

Date	Location	Semi Structured Interview	Informal Group Discussion	Observation
11/2/15	Loputuk HC 3	2 HWs	0	1 (clinic)
11/2/15	St Pius Kidepo HC 3	4 HWs	1 (6 VHTs)	2 (clinic)
11/2/15	Moroto Regional Referral Hospital	2 (1 HW, 1 MoH worker)	1 (3 Female carers of beneficiaries no in the program)	1 (hospital)
11/2/15	Aworobu	1 Female carer of beneficiary not in the program	3 (7 Male elders, 2 female elders, 15 children)	1 (community)
12/2/15	Loputuk HC 3	1 HW	4 (5 Males, 5 Female community members, 6 mothers of beneficiaries in the program and 1 VHT, 8 mothers and 3 men from community)	1 (clinic)
12/2/15	St Pius Kidepo HC 3	3(1 HW, 1LC1, 1 Mother of beneficiary in program)	2 (7 women from community, 5 men from community)	2 (clinic and community)
12/2/15	Rupa HC 2	4 (1 traditional healer, 1 HW, 1 VHT, LC1)	1 (20 female carers of beneficiaries in the program)	2 (clinic and community)
12/2/15	Moroto Regional Referral Hospital	4 (1 HW, 1 Mother of beneficiary in program, 1 VHT, 1 LC1)	4 (4 mothers of beneficiaries in the program, 5 men, 2 VHTs, 8 mothers)	1 (clinic)
12/2/15	Lopelipel HC	2 (1 HW, 1 VHT)	4 (2 TBAs, 9 men, 6 women, 7 male elders and 1 woman)	1 (clinic)
13/2/15	DMO	4 (1 Mother of beneficiary not in the	1 (10 VHTs)	1 (clinic)

		program, 1 HW, 1 Priest, 1 Teacher)		
13/2/15	Aworobu, Katanga, Nangorikipi	4 (1 VHT, 1 TBA, 1 mother, 1 child)	3 (8 men, 6 TBAs, 7 elders)	1 (community)
13/2/15	Nadunget HC 3	3 (1 HW, 1 LC3 1 chairman, 1 headteacher)	2 (11 children, 4 mothers of beneficiaries not in the program)	2 (clinic, community)
13/2/15	Tapac HC3	4 (1 VHT, 2 priest, 1 HW)	7 (12 community members, 6 men, 2 village elders, 3 school teachers, 15 community members, 2 TBAs, 8 men and 1 woman)	2 (health centre)
14/2/15	Lia- Nabuin	2 (1 male, 1 LC1)	3 (10 children, 16 community members, 8 teachers)	1 (clinic)
14/2/15	Kakingol HC3	3 (2HWs, 1 village elder)	2 (6 men, 7 teachers)	1 (clinic)
14/2/15	Alamai, Leyaraboth	9 (3 females, 4 males, 1 child, 1 village elder)	1 (2 male teachers)	1 (community)
14/2/15	Arengkeju village, Kopoe village	2 (1 VHT, 1 LC1)	5 (20 mothers, 10 village elders, 18 men, 19 community members, 2 VHTs)	1 (community)
14/2/15	Nakwang village, Lopelipel village	1 VHT	3 (14 children, 8 men, 8 community members)	1 (community)
16/2/15	Moroto Regional Referral Hospital ITC	2 (1 sister in charge, 1 nursing assistant)	1 (7 mothers of beneficiaries of children in ITC)	0
TOTAL		57	48	23

Appendix 4. Boosters & Barriers with Scoring.

Booster	Code	Tally	Weighting
Outreaches done through nutritional assessments where VHTs screen and refer to H/F, and re-screening is done after client referred to the community following treatment with follow up. Outreaches are supported by IP partners. Malnutrition screening at hospital for every client	12A 12A 11B 3A 16A 11B 3B 3A 2A 11B 11A 8B 12A 3A 3B 9B 1B 11A 12A 3B 13B 12A 12A 4B 11A 3C 2B 3B 11A 16A 11B 16A 3A 9A 4B 1B 9B 11A 2B 8A 8B 1B 3A 9B 12A 16A 12A 3B 1A 4B 11B 3A 16B 4A 13A 13A 1A 1A 16B 12A 12A 11B 3A 9B 11B 12A 14 11B 12A 12A 12A 12A 12A 13B 16B 7A 8B 12A 12A	1	4
Good knowledge of malnutrition in community, VHTs and health workers.	16A 3A 16A 9B 13A 9A 3A 8B 1B 3A 9B 9B 1B 7A 3B 3A 3A 4B 7A 2B 4B 3B 2B 7A 3C 5A 16A 3A 11A 11A 12A 16A 3B 13B 11A 11B 12A 11B 11B 11A 11A 11A 12A 12A 14 12A 12A 12A 12A 12A 11A 11A 11B 11B 12A 12A 12A 12A 121 11A 11A 11A 12A 12A 11B 11A 12A	2	3
Good awareness of program by staff and community.	12A 11A 11B 12A 12A 11A 11B 11A 14 2B 4B 3B 3A 7A 7B 2B 2B 2A 3B 3B 16A 16A 9B 4B 16B 8B 1B 8B 1B 3A 2B 9B 3A 16A 16A 1B 5B 3B 8A 3A 16B 1A 8B 1A 13B 16B 16B 1A 8B 4B 3B 1B	3	4

Well organised and structured OTP	12A 14 12A 14 14 14 12A 14 14 14 11B 1B 9B 12A 12B 10A 12A 3A 11A 3B 3A 5A 16A 16A 8A 11A 16A 9A 1B 2A 4B 8B 3A 12A 1B 7A	4	2
Availability of supplies improves opinion of the program and reduces defaulters.	12A 12A 12A 1B 11B 11A 1B 4B 3B 3A 4A 16B 13A 1A 4B 8B 11A 4B 8B 11A 9B 4A 13B 8B 16B 4B 7A 5A 16B 4B 4B 2B 4A 16B 13B	5	4
Health workers and the community have a good awareness of the common childhood illnesses	3B 4B 3B 3B 2B 7A 2A 7A 8B 9B 1B 2B 8B 2B 8A 4B 3C 2B 7A 11A 12A 11B 11A 11B 12A 12A 11B 11A 12A 12A 12A	6	5
VHTs are aware of the community referral system.	12A 11A 12A 12A 9B 11B 12A 14 11B 12A 3A 12A	7	4
Health Workers have a positive attitude towards OTC as well as clients.	12A 11B 12A 11A 11A 11B 11B 11A 12A 14 11A	8	3
Communities see RUTF as medicine and utilise it effectively.	1B 4B 3B 1A 13A 4B 11A 1A 13A 16B 5A 4B 3B 8B 1B 3B 13B	9	2
Early health seeking behaviour with self-referral.	3B 2B 7A 3C 12A 3B 2B 8A 3A 13B 14A 12A 12A	10	1
Community sensitisation needs identified, coupled with ongoing	12A 11B 12A 11B 12A 12A 11A 12A 11A 16A	11	4

RUTF counselling and follow up of cases by VHTs.			
Good coordination between ITC, OTC and SFP facilitated by team work and harmonising distribution days.	11B 14A 12A 12A 9B 12A 12A	12	4
Children left with responsible carers and there is male involvement in child health.	4A 16B 3B 1B 4B	13	1
Closeness to the health facility increases accessibility to OTC services.	3A 11B 8B 4B	14	3
Health workers and VHTs acknowledge the need for training and support.	12A 12A 12A	15	3
Good record keeping was observed in some health facilities.	14 14 14	16	1
In one village, it was observed that latrines existed and were utilised correctly.	2B 14	17	1

Barrier	Codes	Tally	Weighting
Opportunity costs prevent mothers attending OTC services when they should, in some instances younger siblings are taking beneficiaries to the clinic.	12A 12A 4B 11A 9A 3A 12A 2B 12A 14 3C 7A 12A 2A 3C 12A 12A 11B 11A 12A 12A 11A 3C 12A 3C 5A 16B 4A 8B 12A 8B 4A 11A 8B 16A 11A 12A 13B 3B 1A 13B 16B 12A 16B 7A 3B 14 11A 13A 4A 14 1A 3A	11A	5
Lack of awareness of program increases defaulting, in some instances, it was reported that beneficiaries thought they had to pay for the service.	5A 16A 5A 9B 13B 16A 5A 3B 4B 16B 1B 12A 12A 16A 7A 7A 16A 4B 16B 4B 1B 8B 4A 8B 8B 12A 4B 2A 7A 4B 2A 16B 1A 7A 16A 11B 5A 4B 2B 5A 2B 2B	2	3
Long waiting time and poor hygiene at the health centre was observed.	12A 12A 12A 12A 14 11A 11A 1B 5A 12A 3A 12A 16B 4A 11B 16B 4B 14 16A 7A 3B 14 14 16B 14 14 14 12A 7A 7A 16A 13A 3A 8B	3	2
Late treatment seeking behaviour caused by factors such as preference to traditional healers.	4B 11B 4B 12A 3B 16B 4B 2A 5A 11A 1A 5A 3B 13B 1B 11B 4B 16A 3C 4B 16B 10A 8B 2B 2A 10A 3B 4B 11B 4B 11A 12A 13B 16B 13B 4A 8B 16B 1B 11A 8B 16A 1A	4	4
Inappropriate messages reported by both health workers and members of the community have led to a lack of community sensitisation, concerning issues such as community perception of RUTF leading to death and/or diarrhoea and birth spacing.	12A 12A 3A 4B 11B 7A 11A 5A 12A 7A 1B 3B 12A 2B 12A 11A 11A 1B 3B 8B 16B 4B 2B 2A 12A 2B 2B 3B 11B 11A	5	3
Long distances hinder access and Utilisation of OTP services.	13A 16B 1A 4A 12A 4B 2B 11B 11A 11B 12A 4B 12A 3C 16A 13A 3B 8A 4B 3B 1B 12A 13B 7A 5A 3B 12A 5B 9B	6	3

Food insecurity leads to double registration In the OTP program.	12A 12A 12A 12A 12A 12A 7A 16A 4B 12A 2B 12A 12A 3A 11A 7A 5A 8B 16B 3A 12A 3B 7A 4B 3B 7A 11A	7	5
Communities are not able to recognise Signs and symptoms of malnutrition early Leading to late admission and long stays in the program.	12A 5A 12A 16B 4B 7A 3C 11A 12A 3B 4B 8B 7A 7A 4B 12A 14 11A 16A 16B 11A 12A 13B 14 16B 11A	8	4
Due to poverty mothers refuse to be Discharged from OTC or transferred to Other OTCs.	12A 3C 12A 7A 12A 3B 12A 12A 3C 4B 14 12A 16B 7A 16A 13A 12A 1B 16A 4B 7A	9	2
Poor attitude of health workers has led to fear among mothers whose children have relapsed to come back to the health facility.	3A 14 11B 12A 12A 4B 4B 2B 12A 7A 3C 16A 9B 1B 8B 4B 11B 13A 4B 7A 8B	10	2
The rainy season affects access to OTC sites.	2B 12A 14 16A 11B 4B 8B 11A 5A 12A 3A 12A 4A 1A 16B 3A 13B	11	3
Screening at community level, malnutrition associated with HIV/AIDS, referral at ITC, poor attitude of VHTs lead to stigma.	3B 3B 11B 5A 2B 2B 2B 4B 8B 12A 12A 2A 3A 4B 11A 2B 11A	12	1
Inadequate staffing coupled with heavy workload and lack of motivation leads to poor programing.	12A 12A 12A 11B 12A 12A 12A 12A 11B 12A 11A	13	4

No follow up of cases in the community leads to relapses and defaulting	12A 12A 12A 12A 7A 12A 12A 12A 12A	14	3
VHTs lack referral forms.	11A 11B 12A 3A 2A 7A 14 11B 12A	15	1
Some VHTs were illiterate, had inadequate knowledge on effective screening and were unable to support outreach services in the community leading to rejection of some cases at the OTC.	12A 12A 11A 9B 7A 16B 1B 3B 4A	16	3
Review of data collection tools showed that most of the health facilities had poor record keeping	14 14 14 12A 14 14 14	17	5
It was observed by staff and community members that alcohol and tobacco use were a common factor contributing to malnutrition	7A 11A 11A 16A 14	18	2
There was a lack of knowledge on childhood illnesses by the community.	4B 12A 4B 11A	19	1
Some health workers need to be trained on IMAM.	12A 5A 12A 5A	20	4