



SLEAC and SQUEAC CMAM Coverage Assessments of Kebbi State, Nigeria

Simplified LQAS Evaluation of Access and Coverage
Semi-Quantitative Evaluation of Access and Coverage
Community based Management of Acute Malnutrition

MARCH-APRIL 2016

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Figure 1: A caretaker, Grandmother, providing RUTF to a beneficiary during the OTP day, SQUEAC WINNN 2016 (Photo: JWight©)



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ACRONYMS

ACF	Action Against Hunger (Action Contre la Faim)
BBQ	Barriers, Boosters and Questions
CHW	Community Health Worker
CMAM	Community Based Management of Acute Malnutrition
CMN	Coverage Monitoring Network
CV	Community Volunteer
DFID	Department for International Development
ECHO	European Commission's Humanitarian aid and Civil Protection
FSMS	Food Security and Monitoring System
GAM	Global Acute Malnutrition
HF	Health Facility
HV	Home visits
IYCF	Infant and Young Child Feeding
LoS	Length of Stay
LGA	Local Government Areas
LQAS	Lot Quality Assurance Sampling
MAM	Moderate Acute Malnutrition
MCH	Maternal Child Hospital
MoH	Ministry of Health
MUAC	Mid-Upper Arm Circumference
OTP	Out-patient Treatment Program
PHC	Primary Health Centre
RUTF	Ready-to-use Therapeutic Food
SAM	Severe Acute Malnutrition
SC	Stabilisation Centre
SDU	Service Delivery Unit
SDP	Service Delivery Point
SLEAC	Semi-quantitative LQAS Evaluation of Access and Coverage
SMART	Standardized Monitoring for Relief and Transition
SPHERE	Humanitarian Charter and Minimum Standards in Humanitarian Response
SQUEAC	Semi-Quantitative Evaluation of Access and Coverage
SCI	Save the Children International
UNICEF	United Nations Children's Fund
WHZ	Weight-for-Height Z-scores
WINNN	Working to Improve Nutrition in Northern Nigeria



SUMMARY

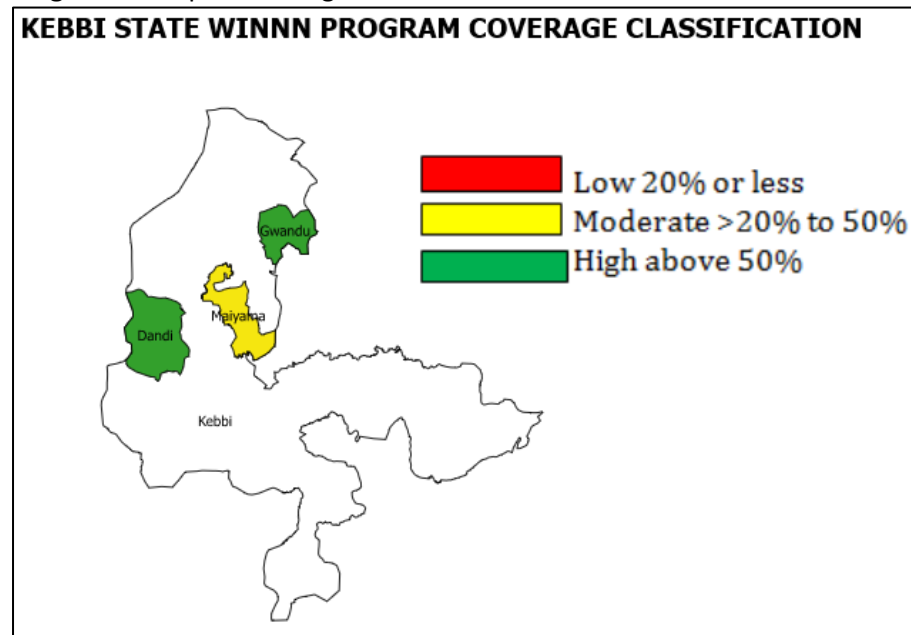
Kebbi is a state in north-western Nigeria with a population of approximately 3.8 million people. Kebbi State is one of the five states in northern Nigeria implementing the WINNN (Working to Improve Nutrition in Northern Nigeria) project with focus in three LGAs namely Maiyama, Gwandu and Dandi. The WINNN partnership (ACF, Save the Children and UNICEF) has been supporting community based management of acute malnutrition (CMAM) services since 2013 in the State.

Since the inception of CMAM program in Kebbi State in 2013, no program coverage has been done. WINNN partners therefore decided to conduct program coverage assessment to determine the level of met need in the areas of operation and to provide concrete recommendations in order to improve access and coverage of SAM (Severe Acute Malnutrition) treatment.

SLEAC (Simplified LQAS Evaluation of Access and Coverage) methodology was used to classify coverage for each LGA, estimate overall coverage for the State and as a targeting tool for in-depth investigation and analysis in one LGA. SQUEAC (Semi Quantitative Evaluation of Access and Coverage) methodology was thereafter adopted to conduct in-depth investigation and analysis of factors affecting coverage in one LGA.

Dandi and Gwandu LGAs were classified as having high coverage where else Maiyama LGA was classified as having moderate coverage. The overall State estimate was at 42.0% (95% CI: 37.0% - 47.0%). This is below the SPHERE standards of above 50% for rural area. Chi Square test indicated that coverage was patchy across the LGAs.

Diagram 0: Map of coverage classification for Kebbi State – SLEAC WINNN March 2016



The majority of barriers identified during the SLEAC assessment pointed to the weak community mobilisation component of the CMAM programme in Kebbi State.

In order to fully achieve the objectives, Maiyama LGA was chosen by the stakeholders for in-depth investigation and analysis of factors affecting program coverage and acceptance. Maiyama has the poorest coverage and experiencing more challenges thus the report will be best used as an advocacy tool to mobilize resources for the three LGAs. The results and solutions will be adopted by the other 2 LGAs where applicable.



The SQUEAC in Maiyama LGA revealed barriers and boosters affecting coverage and are presented based on themes in Table 0.

Table 0: Thematic list of barriers and boosters – SQUEAC WINNN April 2016

Theme	Barriers	Boosters
Geographic	- Distance - Poor roads - Lack of OTPs in all health facilities	Delivery of RUTF assured
Seasonal	High river, difficult passes (rainy season)	
Socio-cultural	- Late admission: preference of traditional treatment, husband refusal, lack of finances, etc. - Lack of awareness and sensitisation sessions for influential men and decision makers - Lack of understanding of malnutrition - Sense of rejection by caretakers	- Good appreciation of CMAM program - Good awareness of CMAM program
Financial	- Perception of lack of CV motivation - Lack of financial resources to attend health facility	Availability of state and partner financing for CMAM and capacity building
Program Quality	- Lack of action on community mobilisation strategy and poor sensitisation plan – lack of screening in all villages (CV coverage outside OTP areas) - Lack of quality assurance during OTP-site days: long wait-times, lack of HF staff, lack of space - Inconsistent care provided – lack of quality assurance practices - Lack of supportive supervisory visits from LGA and State level actors - Poor follow-up of defaulters - Trained HF staff transferred or unavailable	- No stock-outs and improved stock management - Availability of IYCF and CMAM community volunteers (complementary programming)

In addition to barriers and boosters developed in stage 1 activities of the SQUEAC, further analysis of the small survey on CV quality revealed that CVs are not capable of correctly completing anthropometric measurements of oedema and MUAC – which can and likely does have a negative effect on referrals and the sense of rejection based on measurements and admissions at the OTP site. In addition, there seems to be a general lack of follow-up and monitoring of CV activities by the program, LGA and state level personnel; as the majority of ‘trainings’ and ‘supervisions’ occurred only for the CVs who participate at the HF on OTP days.

Based on qualitative interviews and the survey data, it is evident that CV activities require attention and quality improvements with regards to awareness raising sessions in the community. Many CVs, both male and female, would be limited in discussing this important and sometimes sensitive topic with the opposite gender, which may limit access to both caretakers (typically women) and men (decision makers).

Based on SQUEAC results, it is clear that the key factors affecting coverage in Maiyama LGA include **poor community mobilisation activities** for CMAM, **limited sensitisation** for influential people, **lack of geographic coverage** of OTP sites, **limited monitoring and supervisory activities**, **poor understanding of malnutrition** and **lack**



of program quality management at HF and community levels. Overall, there seems to be a good perception and acceptance of the CMAM program, with no stock-outs and improvements made in managing defaulters; however, without improvements to overall quality of the program, coverage is at risk of remaining insufficient.

Overall, it is evident that quality management and community mobilisation activities require improvements and better monitoring mechanisms from state and LGA stakeholders.

The table of global recommendations was developed based on SQUEAC results to ensure that action points and key factors affecting coverage can be addressed.

GLOBAL RECOMMENDATIONS

Community Mobilisation	CMAM Program Quality	Communication/Advocacy
Ensure the inclusion of clear sensitisation strategy (materials and target audience)	Identify needs for capacity building (resources and trainings, etc.)	Identify opportunities for advocacy at LGA, state and national level for improved performance
Ensure means of monitoring CV activities and quality performance at community level	Ensure monitoring roles are identified (who is responsible and at what frequency)	Consider advocacy needs for financing and delivery of CMAM services
Improve capacity for active screening and referrals	Ensure capitalisation on opportunities for sensitisation and systematic screening	Ensure coverage of CMAM activities includes clear monitoring and communication activities between community, HF, LGA, and State actors
Identify methods to improve coverage of community activities	Identify methods to improve coverage of OTP and prevention activities	Ensure peak hunger gap and defaulter periods are covered through expanded strategies and solutions

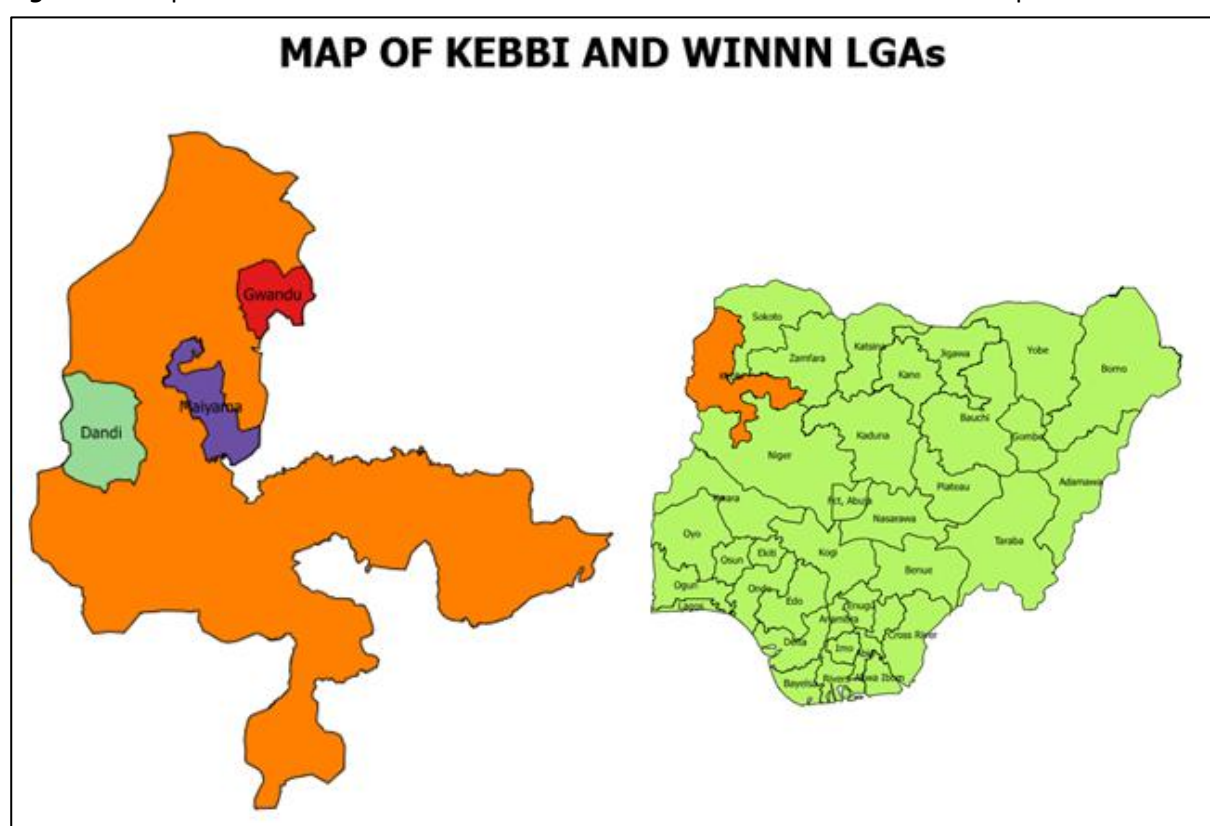


1. INTRODUCTION and CONTEXT

1.1. CONTEXT and MAP

Kebbi is a state in north-western Nigeria with its capital at Birnin Kebbi. Kebbi State is bordered by Sokoto State, Niger State, Zamfara State, Dosso Region in the Republic of Niger and the nation of Benin. It has a total area of 36,800 km² and a population of approximately 3.8 million people.

Diagram 1: Map of Kebbi state and identification of WINNN LGAs – SQUEAC WINNN April 2016



Kebbi State is mainly populated by Hausa people, with some members of Fulani, Dukawa, Kambari and Kamuku ethnic communities. Kebbi is predominantly Muslim with some Christian population¹.

1.2. REGIONAL CONTEXT

The northern part of the state is sandy with the Rima River passing through Argungu to Bagudo LGAs where it empties into the Niger River. Agriculture is the main occupation of the people especially in rural areas, with the main crops produced being grains; animal rearing and fishing are also common. Kebbi state has one of the most agriculturally viable environments since it is endowed with high soil fertility, vast farmlands and economically viable rivers sheltered by fine tropical climate². Major food crops in the area are millet, guinea-corn, maize, cassava, potatoes, rice, beans, onions and vegetables, while cash crops including wheat, soya beans, ginger, sugarcane, groundnuts and tobacco are also produced in the state. Similarly, fruits such as mango, cashew, guava and pawpaw are produced under horticulture.

¹ Source: <https://en.wikipedia.org/wiki/Kebbi>

² Source: <http://services.gov.ng/kebbi>, accessed on April 14th, 2016



1.3. NUTRITION CONTEXT

The SMART results available³ indicate a SAM prevalence of 2.8% (95% CI: 1.8-4.4) for MUAC measurements for Kebbi state, with SAM rates at 2.9% (95% CI: 1.9-4.4) for WHZ scores. Majority of the children were stunted at 57.4 % (95% CI: 53.1-61.6); however the complete report was not available for analysis.

1.4. WINNN INTERVENTION DESCRIPTION – KEBBI STATE

In partnership with the Department for International Development, the WINNN (Working to Improving Nutrition in Northern Nigeria) partnership (ACF, Save the Children and UNICEF) has been supporting community based management of acute malnutrition (CMAM) services in Nigeria since 2011.

Some of the objectives of WINNN is to improve nutrition by providing treatment for severe acute malnutrition using the CMAM model, vitamin A supplementation and deworming, and promotion of improved infant and young child feeding (IYCF) practices. This will benefit 6.2 million children under five across five states (Kebbi, Katsina, Jigawa, Zamfara, and Yobe) in northern Nigeria. The WINNN project is composed of four components:

1. Integration of Micronutrient interventions into Routine primary health services
2. Delivery of effective IYCF interventions
3. Delivery of effective treatment of Severe acute malnutrition
4. Strengthening Advocacy and coordination at the State and National levels.

Whereas the project covers the above mentioned five states, in terms of support to CMAM services, the partners are supporting only three Local Government Areas (LGAs) in each of the five states. In Kebbi state, three LGAs, Dandi, Gwandu and Maiyama LGAs, are supported by WINNN in the implementation of CMAM programming. The program in Maiyama supports 5 OTP sites, the stabilisation centre (SC) and the work of 150 CMAM community volunteers (CV). Complementary to the CMAM direct programming, is the IYCF CVs that are present in 550 villages – some of the CMAM CVs are also the IYCF CVs. The gender breakdown of CMAM CVs is not available; IYCF CVs are 60% women due to the nature of the topics being discussed.

In the past year, programming included training for CHWs and CVs and many attempts to improve and assure services at the SC; however it was indicated that this important CMAM component is weak and requires improvements.

The purpose of the assessment is to provide the WINNN partners with coverage information to determine the level of met need in the areas of operation and to provide concrete recommendations in order to improve access and coverage SAM treatment.

³ Source: Summary Findings of Cross-Sectional Health and Nutrition Survey, Nigeria, July-Sept 2015



1.5. OBJECTIVES

General Objective

To complement existing coverage data in order to have evaluation of access and coverage of SAM treatment in all 15 LGAs where WINNN supports SAM treatment, with a view to strengthen routine programme monitoring and increase programme coverage.

Specific Objectives

1. To classify coverage in each LGA of Kebbi state, and estimate coverage for the state using the SLEAC methodology
2. To perform an in depth investigation (SQUEAC) in 1 LGA
3. With the data collected through the above assessments and a reflection on existing coverage data, the following objectives will be achieved:
 - a. To identify factors (boosters and barriers) affecting the uptake of the SAM treatment
 - b. To provide an in depth analysis of programme performance and factors affecting coverage across the LGAs in Kebbi state.
 - c. To develop specific recommendations to improve acceptance and coverage of the programme
 - d. To enhance competencies of partner staff in coverage survey methodologies.

This report therefore combines both overall SLEAC results and each individual state SQUEAC results to ensure objectives are met.



2. SECTION ONE: SLEAC

In order to classify coverage across the three LGAs, SLEAC methodology was chosen. SLEAC is a rapid low-resource survey method that classifies (e.g. low, moderate or high) coverage at the service delivery unit (SDU) level. SLEAC requires small sample sizes (e.g. $n \leq 40$) to make reliable classifications per SDU⁴. SLEAC can also estimate coverage over several service delivery units hence ideal for assessing the overall coverage for Kebbi State. The LGA was therefore chosen as the unit of classification with all villages in the three LGAs being chosen as the primary sampling units. Villages are the most basic administrative units within a LGA. This section describes the process and presents the results of the SLEAC survey conducted in Maiyama, Dandi and Gwandu LGAs in Kebbi State from 26th February to 5th March 2016.

2.1 SLEAC SURVEY SAMPLE DESIGN

First stage sampling method: The first stage sample was the villages to be surveyed in each of the three LGAs. The first stage sampling method was a spatial sampling of villages from a complete list of villages per LGA stratified by administrative unit, that is, wards.

Sample size: The target sample size for SLEAC in each LGA was 40 SAM cases as recommended. Based on this minimum sample size requirement, appropriate number of villages to sample was estimated using the following formula:

$$n_{\text{villages}} = \frac{\text{Target sample size}}{\text{Average village population}_{\text{All ages}} \times \% \text{ under 5} \times \text{SAM prevalence}}$$

The number of villages sampled per LGA was calculated using this formula and based on the parameters listed in Table 1. Systematic random sampling was then employed to select the required number of villages.

Table 1: Sample sizes and number of villages sampled – SLEAC WINNN March 2016

Sub-county	Estimated total population	Average village population	% 6-59 months	SAM prevalence*	Target sample size (n)	n_{villages}
MAIYAMA	231,241	1,101	18	2.3%	40	9
DANDI	189,895	527	18	2.3%	40	19
GWANDU	198,773	546	18	2.3%	40	18

* It is better to use a lower SAM prevalence estimate. Therefore the prevalence was recalculated as $\text{Prevalence} = 2.8 - (2.8 - 1.8)/2 = 2.3\%$ for all LGAs

Second stage sampling method: This method is usually either an active and adaptive case finding method or a house-to-house screening. For the Kebbi SLEAC, active and adaptive case finding for SAM cases was appropriate whereby screening of children 6-59 months using paediatric MUAC tape and examination of bilateral pitting oedema was done. During the assessment all severely malnourished children identified who were not in program were referred to the nearest SDP (Service delivery point).

⁴ Myatt M, et al, (2012), Semi-Quantitative Evaluation of Access and Coverage (SQUEAC)/ Simplified Lot Quality Assurance Sampling Evaluation of Access and Coverage (SLEAC), FANTA III/FHI360, *Technical Reference*. Available at: <http://www.fantaproject.org/downloads/pdfs/SQUEAC-SLEAC-Technical-Reference-Oct2012.pdf>



Survey team training and composition: The SLEAC program coverage was conducted with the participation of Save the Children (WINNN) staff, Ministry of health and community members who formed survey team of 20 persons. The team was trained on the SLEAC methodology including case-finding method for the survey. The survey team consisted of a total of nine teams; three per LGA. A team comprised of two enumerators and one member of the core team per LGA to guide the enumerators in the process. Once the team arrived at the sampled villages, a village elder was identified to guide the teams during data collection. Each day, the teams would submit data to the supervisor for quality checks and compilation.

2.2 COVERAGE STANDARDS AND DECISION RULES

In order to classify coverage, standard thresholds classifications were set in line with the SPHERE standards for measuring rural therapeutic feeding programmes. The following coverage standards were decided as most appropriate:

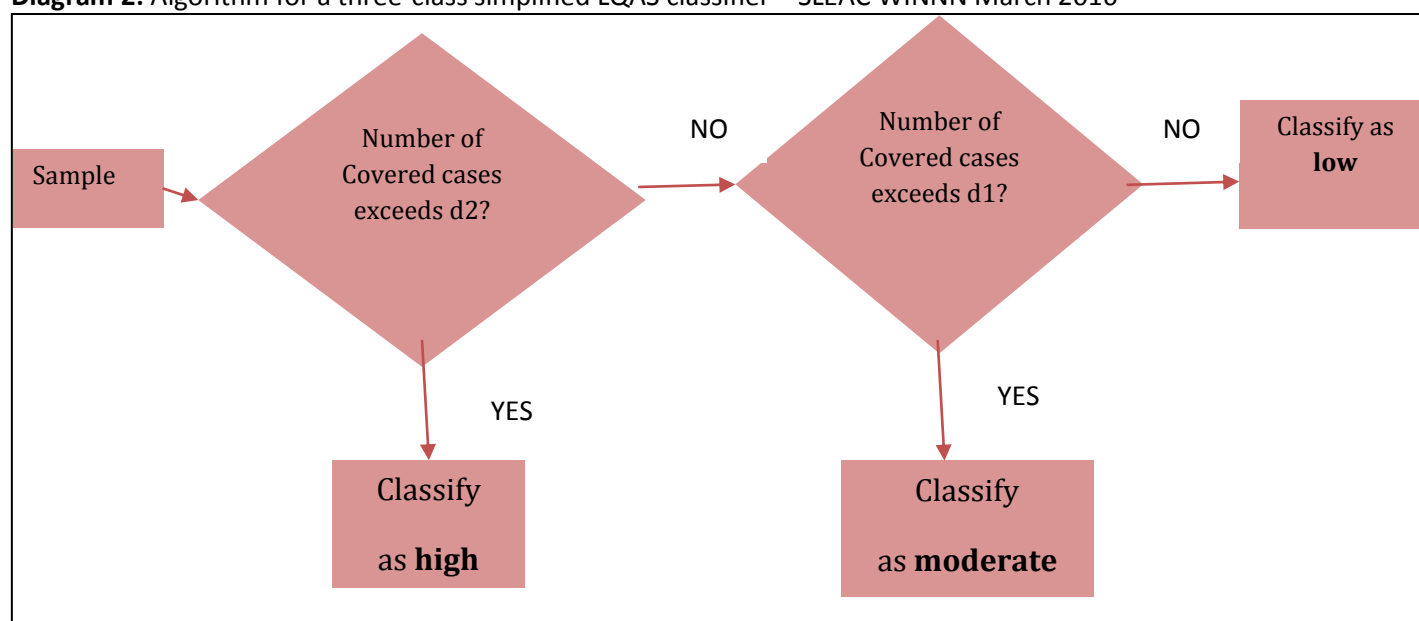
- Low coverage: 20% or less
- Moderate: greater than 20% up to 50%
- High coverage: above 50%

These standards were used to create decision rules using the following rule-of-the thumb formulae below:

$$d_1 = \lfloor n \times p_1 \rfloor = \left\lfloor n \times \frac{20}{100} \right\rfloor = \left\lfloor \frac{n}{5} \right\rfloor \text{ and } d_2 = \lfloor n \times p_2 \rfloor = \left\lfloor n \times \frac{50}{100} \right\rfloor = \left\lfloor \frac{n}{2} \right\rfloor$$

These decision rules were used to classify coverage in each of the three LGAs 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.

Diagram 2: Algorithm for a three-class simplified LQAS classifier – SLEAC WINNN March 2016





2.3 COVERAGE ESTIMATORS

The coverage was classified using the single coverage estimate with the following formula used for calculating cases recovering out of program

Diagram 3: Recovering out of program formula

$$R_{out} \approx \frac{1}{k} \times [R_{in} \times \left(\frac{C_{in} + C_{out} + 1}{C_{in} + 1} \right) - R_{in}]$$

Therefore single coverage estimate utilized the following formula

$$\text{single Coverage} = \frac{\text{Number of active cases in programme} + \text{Recovering cases}}{\text{Total active cases found} + \text{Recovering cases} + \text{Recovering out of programme}}$$

2.4 SLEAC RESULTS

The SLEAC methodology was useful in classifying coverage for each LGA, estimating coverage for the state and listing barriers to access and uptake of CMAM services. Table 3 presents the number of cases found during the wide area survey.

Table 2: Kebbi survey data per LGA – SLEAC WINNN March 2016

LGA	SAM cases not in OTP	SAM cases in OTP	In OTP recovering	Recovering out
Maiyama	60	8	20	44
Dandi	30	22	45	20
Gwandu	25	13	35	21
State Total	115	43	100	86

Table 4 presents the classification of coverage per LGA based on the classification thresholds set.

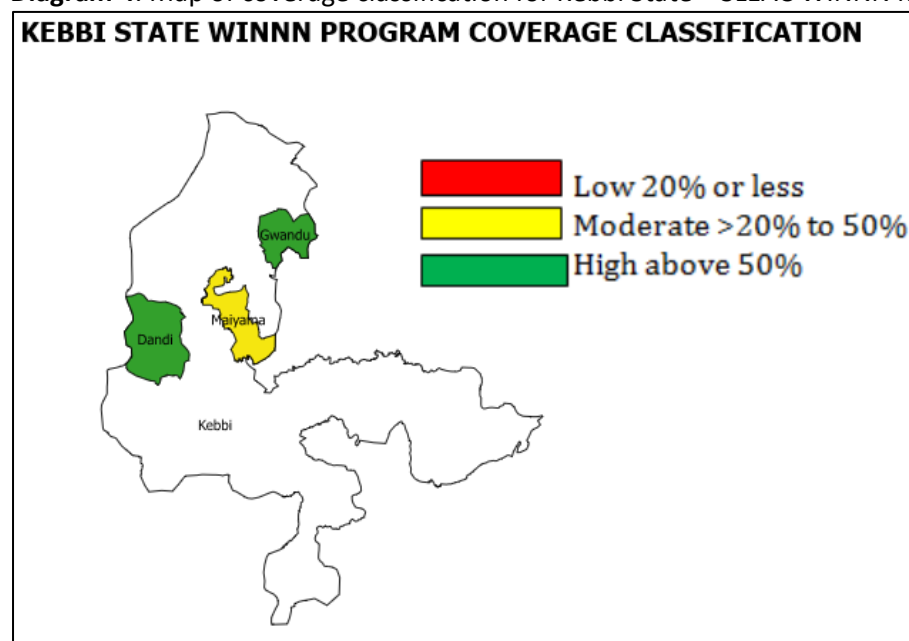
Table 3: coverage classification results – SLEAC WINNN March 2016

LGA	(n)	(c)	Decision rule (d ₁)	Is c > d ₁ ?	Decision rule (d ₂)	Is c > d ₂ ?	Coverage Classification
Maiyama	132	28	26	Yes	66	No	Moderate
Dandi	117	67	23	Yes	58	Yes	High
Gwandu	94	48	18	Yes	47	Yes	High

Dandi and Gwandu LGAs were classified having high coverage while Maiyama LGA had the poorest coverage at moderate classification level. Diagram 4 presents mapping of the classification levels across the three LGAs.



Diagram 4: Map of coverage classification for Kebbi State – SLEAC WINNN March 2016



2.5 OVERALL COVERAGE ESTIMATES

The state coverage estimate was calculated using a posterior weighting approach using the number of cases estimated in each LGA divided by the total number of cases across all LGAs based on the method described in Myatt et al, 2012 as shown in Table 4.

Table 4: Weighting analysis- SLEAC WINNN March 2016

LGA	Population	% of under 5	SAM Prevalence	N	$W=N/\sum N$
Maiyama	231,241	18	2.3%	957	0.37
Dandi	189,895	18	2.3%	786	0.31
Gwandu	198,773	18	2.3%	823	0.32
Total	529909	18	2.3	2566	1.00

$$N = \left[\frac{\text{population of service delivery unit all ages} \times \text{percentage of population 6-59 months}}{100} \right] \times \frac{\text{SAM Prevalence}}{100}$$

Table 7: Overall SAM single coverage estimate- SLEAC WINNN March 2016 – SLEAC WINNN March 2016

Population Data				Total expected SAM	Weight	Sample	Cases IN	Coverage proportion	Weighted coverage
LGA	Population	% 6 - 59 months	SAM prevalence	N	w	n	c	c / n	w * c / n
Maiyama	231,241	18	2.3%	957	0.37	132	28	0.21	0.08
Dandi	189,895	18	2.3%	786	0.31	117	67	0.57	0.18
Gwandu	198,773	18	2.3%	823	0.32	94	48	0.51	0.16
Total	-			2566	1.00				0.42



The overall OTP single coverage estimate was 42.0% (95% CI: 37.0% - 47.0%). This is below the SPHERE standards of above 50% for rural areas.

Chi-square test was performed to check whether coverage across the LGAs was patchy.

Table 8: Chi- square test analysis – SLEAC WINNN March 2016

LGA	Sample size	O^*	E^{**}	$(O - E)^2$	$\frac{(O - E)^2}{E}$
Maiyama	132	28	$132 \times \frac{143}{343} = 55.0$	$(28 - 55.0)^2 = 729.9$	$\frac{729.9}{55} = 13.3$
Dandi	117	67	$117 \times \frac{143}{343} = 48.8$	$(67 - 48.8)^2 = 331.6$	$\frac{331.6}{48.8} = 6.8$
Gwandu	94	48	$94 \times \frac{143}{343} = 39.2$	$(48 - 39.2)^2 = 77.5$	$\frac{77.5}{39.2} = 2.0$
SUM	343	143***	143***		22.1

* The number of covered cases *observed* in each survey

** The number of covered cases *expected* in each survey if coverage is **not** patchy

*** These columns should have the same total

The value of the chi-square test statistic obtained was 22.1 and when compared to the *critical value 5.99 (for three surveys)* it was greater than critical value thus the coverage was patchy as indicated in table 8. This means that coverage across the three LGAs is not homogenous thus the State coverage estimate should be used cautiously.

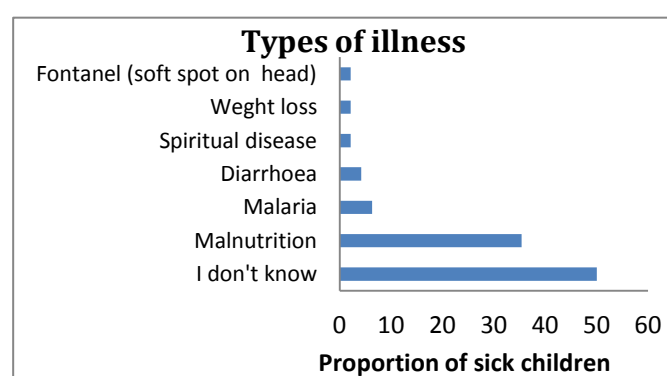
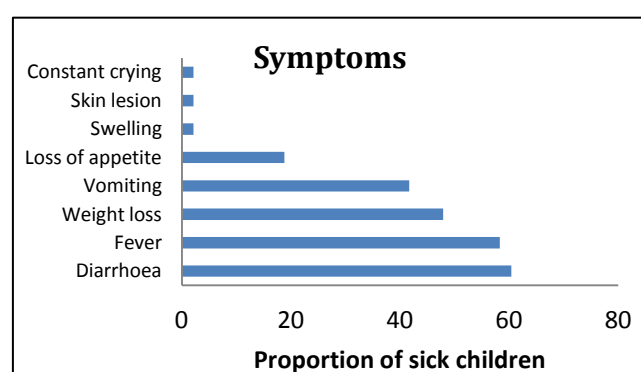
2.6 BARRIERS TO SERVICE UPTAKE AND ACCESS

Questionnaire for carers with SAM cases not in program was administered during the wide area survey. Similar barriers to access and uptake of CMAM services were identified across the three LGAs which generally pointed towards weak community mobilization component of CMAM program.

MAIYAMA LGA

58 (N) mothers of children with SAM cases out of program were interviewed. Majority (98.3%) were from the Hausa ethnic group which is the dominant group in Maiyama. 82.8% (n=48) of the mothers knew that their children were ill with diarrhoea, fever, weight loss and vomiting mentioned as the main symptoms. Majority of the mothers didn't know what illness was causing the symptoms; with 35.4% associating the symptoms with malnutrition.

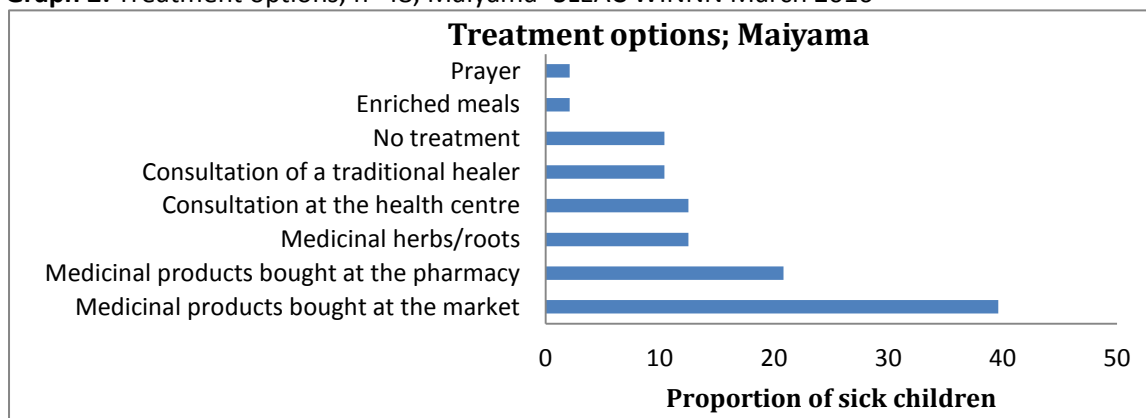
Graph 1: Symptoms and type of illnesses, n=48, Maiyama- SLEAC WINNN March 2016





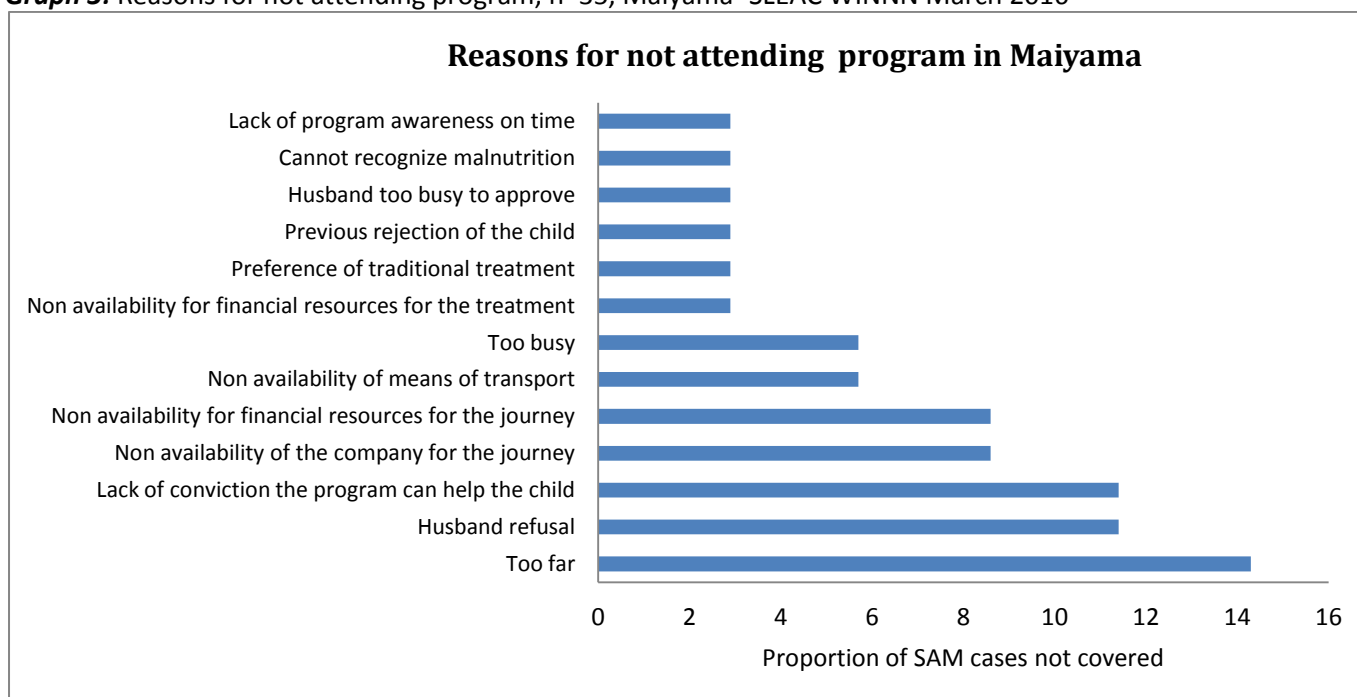
Choice of treatment was mainly done by the father of the child at 82.2% (n=37). Medicinal products bought from the market were the main source of treatment.

Graph 2: Treatment options, n=48, Maiyama- SLEAC WINNN March 2016



74.4% (n=35) of the mothers knew about the CMAM program and were therefore interviewed as to why their children were not enrolled in the program despite the program awareness. The mothers were able to mention the service delivery point and RUTF, however, long distance to the delivery site, husband refusal and lack of conviction that the program can help the child were mentioned as the main barriers to access and uptake of CMAM services. Lack of program awareness on time was mentioned by the caregivers who had just known about the existence of CMAM program and were planning to attend the next OTP day.

Graph 3: Reasons for not attending program, n=35, Maiyama- SLEAC WINNN March 2016



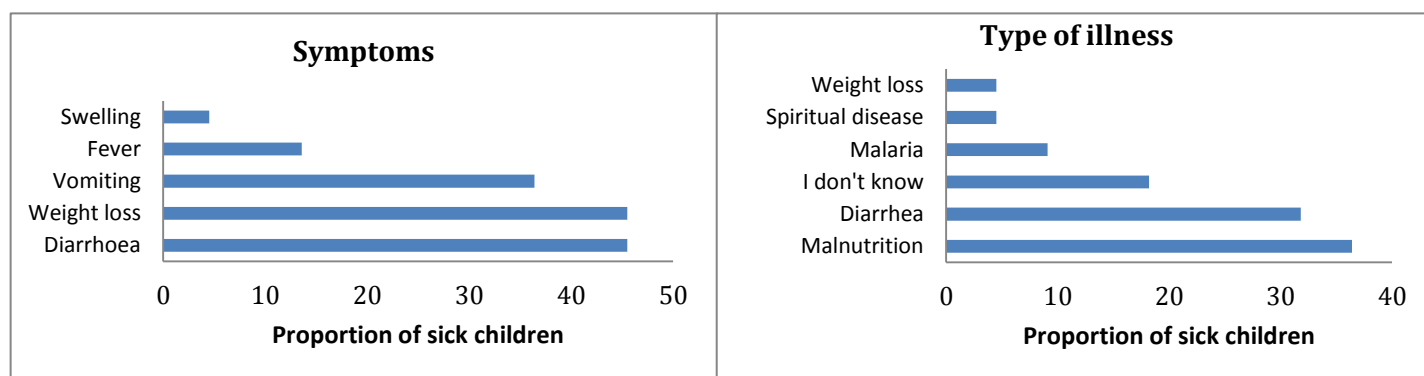
GWANDU LGA

25 (N) mothers with SAM cases out of program were interviewed with majority (64%) from the Hausa ethnic group which is also the dominant ethnic group in Gwandu community. 88% (n=22) of the mothers knew their children were sick. Diarrhea and weight loss were mentioned as the main symptoms. When asked which illness was causing the



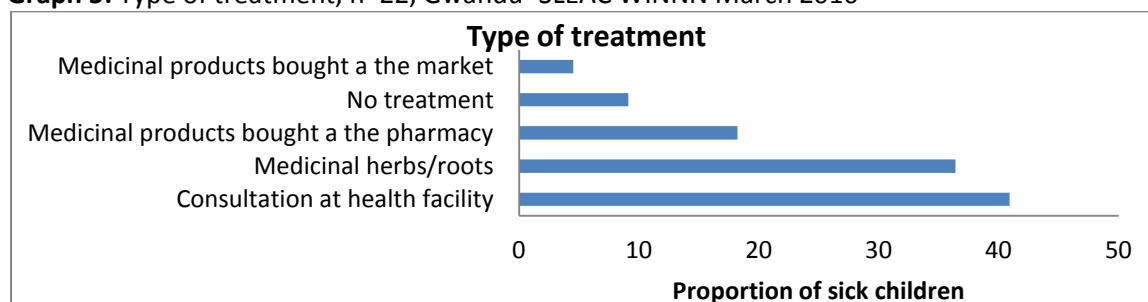
symptoms, malnutrition and diarrhea was mentioned as the main causes at 36.4% and 31.8% respectively. 18.2% of the mothers did not know what type of illness their children were suffering from.

Graph 4: Symptoms and type of illnesses, n=22, Gwandu- SLEAC WINNN March 2016



The choice of treatment was mainly done by the father at 59.1% (n=13). Several mothers had authority to choose type of treatment for their children at 36.4% (n=8) and grandmother at 4.5% (n=1). Consultation at the health facility was the main source of treatment at 40.9% with medicinal herbs/roots being preferred by 36.4%.

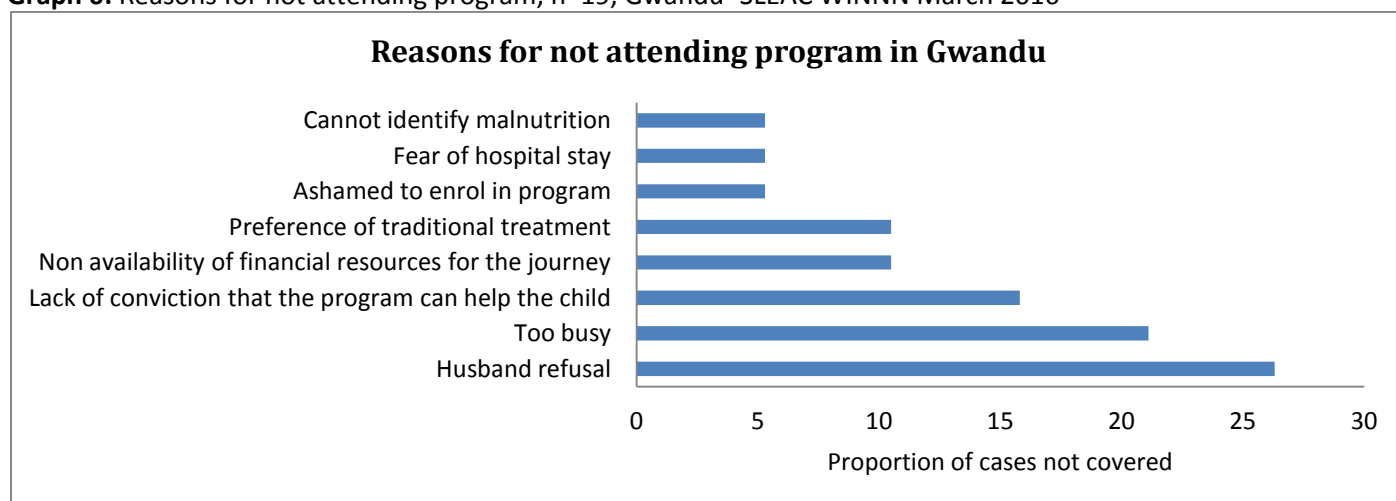
Graph 5: Type of treatment, n=22, Gwandu- SLEAC WINNN March 2016



Program awareness was pretty good with 86.1% (n=19) of the mothers reporting to know of a service at the health facility dedicated to the treatment of malnutrition. Despite the good program awareness, several barriers to service uptake were mentioned. Husband's refusal, mother too busy and lack of conviction that the program could help the child were the main reasons for not attending the program. On the other hand, only one SAM case had defaulted from the program due to lack of conviction that the program can help the child.



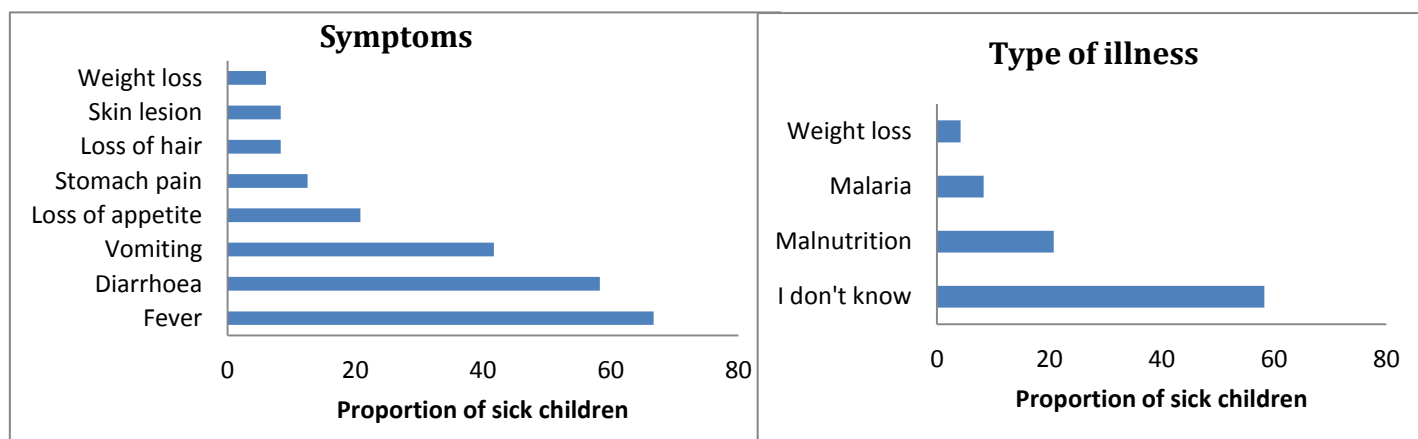
Graph 6: Reasons for not attending program, n=19, Gwandu- SLEAC WINNN March 2016



DANDI LGA

The questionnaire for SAM cases not in program was administered to 29 mothers in Dandi LGA. 58.6% were from the dominant ethnic community, i.e. Hausa. Zabarmawa and Kyangawa ethnic communities had 37.9% and 3.4% respectively. Majority (82.8%, n=24) of the mothers knew their children were ill with fever and diarrhea reported in most of the children. 58.3% of the mothers did not know the cause of symptoms.

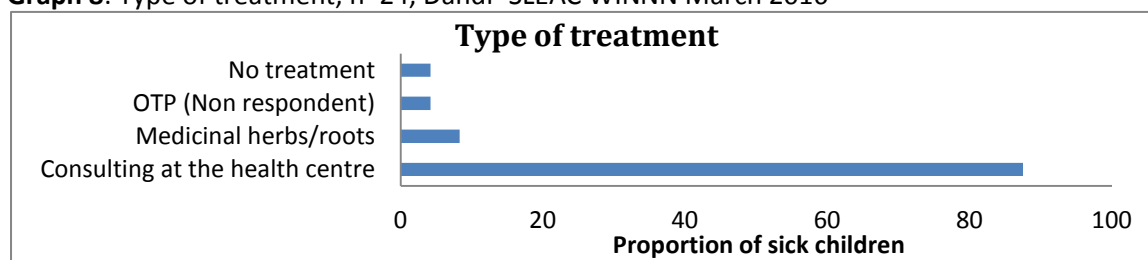
Graph 7: Symptoms and Type of illnesses, n=24, Dandi- SLEAC WINNN March 2016



Health seeking behavior was also considered with majority (87.5%) consulting at the health centre. The choice of treatment was made by the father of the child at 62.5% (n=15). In some instances the mother, both parents and grandmother also made the choice of treatment at 20.8%, 12.5% and 4.2% respectively.

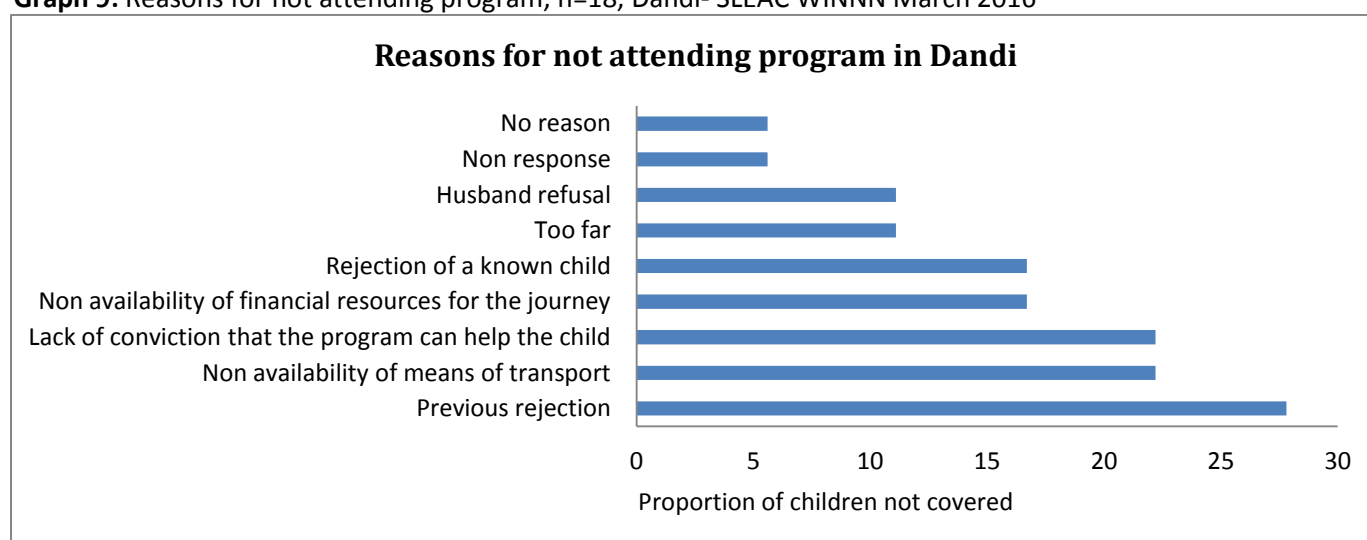


Graph 8: Type of treatment, n=24, Dandi- SLEAC WINNN March 2016



Program awareness was high at 75%. However, previous rejection, lack of conviction that the program can help the child and no-availability of means of transport were reported as the main reasons for not attending program despite the program awareness.

Graph 9: Reasons for not attending program, n=18, Dandi- SLEAC WINNN March 2016



Six SAM cases had previously been enrolled in OTP whereby one was a relapse case and two non respondents. Three defaulters were reported as a result of child refusing to consume RUTF, non-availability of means of transport and finances for the journey.

2.7 CONCLUSION AND RECOMMENDATION

Dandi and Gwandu LGAs were classified as having high coverage where else Maiyama LGA was classified as having moderate coverage. The overall State estimate was at 42.0% (95% CI: 37.0% - 47.0%). This is below the SPHERE standards of above 50% for rural areas. Chi Square test indicated that coverage was patchy across the LGAs.

The majority of barriers identified during the SLEAC assessment pointed to the weak community mobilisation component of the CMAM programme in Kebbi State. This therefore means that the program should invest adequate resources (time, financial and human) into community-based activities to promote understanding and acceptance of the program.

The SLEAC assessment achieved partially the specific objectives of the program coverage assessment in Kebbi State. In order to fully achieve the objectives, Maiyama LGA was chosen by the stakeholders for in-depth investigation and analysis of factors affecting program coverage and acceptance. Maiyama has the poorest coverage and is experiencing more challenges, thus the report will be best used as an advocacy tool to mobilize resources for the three LGAs. The results and solutions will be adopted by the other 2 LGAs where applicable



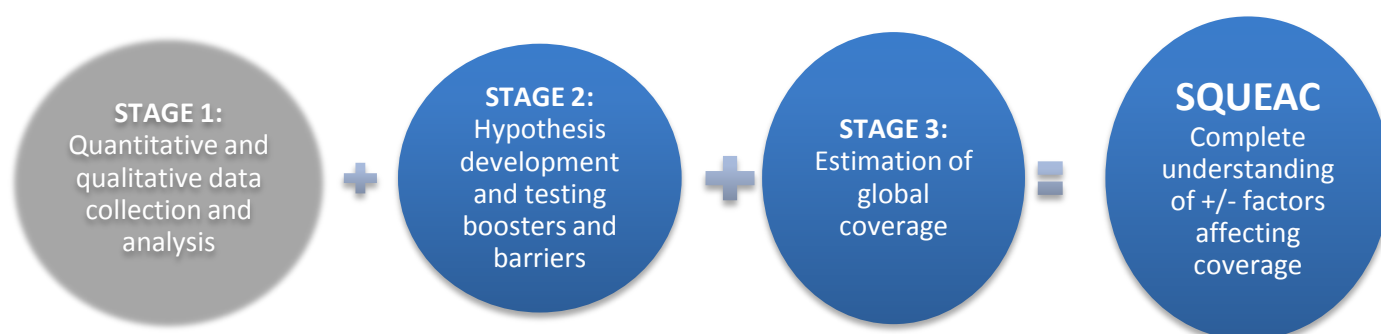
3. SECTION TWO: SQUEAC

3.1 SQUEAC METHODOLOGY

This SQUEAC investigation used the FANTA methodology⁵ and was conducted from March 29th to April 9th 2016⁶ in Maiyama LGA of Kebbi state. This LGA was selected based on the previously conducted SLEAC results, indicating that between the 3 LGAs, Maiyama was estimated to have the lowest coverage, classified as moderate with the other two as high coverage (cf. section 1: SLEAC, for more details and results). In addition, a community assessment component was included⁷.

The SQUEAC investigation comprises of three stages, of which the first two were completed during this evaluation. The third stage, to conduct wide-area surveys to obtain an estimate of coverage was not conducted, as the SLEAC study conducted in March 2016 in Kebbi state was used instead; thereby eliminating the need for stage 3 activities. The methodology of the three stages is presented below.

Diagram 5: Diagram of the steps of a SQUEAC investigation



1. Stage 1: In this stage, quantitative and qualitative data is collected and analysed to develop lists of negative and positive factors (barriers and boosters) affecting coverage of CMAM programs.
2. Stage 2: In this stage, the barriers and boosters are used to develop hypotheses and testing methods to confirm areas or reasons for high and/or low coverage. This includes small area surveys, small surveys and small studies methodologies.
3. Stage 3: In this stage (not included in this SQUEAC investigation), a wide-area survey is conducted to obtain an estimation of coverage for the zone being evaluated, using Bayesian statistical techniques.

3.2. SQUEAC ORGANISATION

The SQUEAC investigation was implemented using 5 teams of 3 enumerators, 15 total (8 women, 7 men), who worked as quantitative and qualitative data collectors, as well as survey questionnaire providers. The teams were supervised in the field under the direction of the SQUEAC consultant, three WINNN program staff and from a distance through the technical support of the CMN.

Enumerator training: All the enumerators were trained over two days, to provide an overall introduction to SQUEAC methodology and practical hands-on technical training for quantitative and qualitative data collection techniques. The enumerators were trained on OTP card understanding and data collection for quantitative data analysis,

⁵ Myatt, Mark et al. 2012. Semi-Quantitative Evaluation of Access and Coverage (SQUEAC)/Simplified Lot Quality Assurance Sampling Evaluation of Access and Coverage (SLEAC) Technical Reference. Washington, DC: FHI 360/FANTA

⁶ See the SQUEAC workplan in Annex 5.

⁷ How to Conduct Community Assessment, Coverage Monitoring Network, 2015



qualitative interview guides and techniques for interviews and focus-group discussions, and anthropometric measures of oedema and MUAC. The training included a brief introduction to CMAM programming, as well as key terminology necessary in the field.

Supervisors also participated in the training days and were available for supervisions and course corrections in the field; as well as participating in data analysis and discussions.

Field work: the field work was organised to ensure that relevant SQUEAC data was collected from all 5 OTP sites, as well as interviews conducted in non-OTP wards. The teams were responsible for identifying the traditional leaders and making introductions prior to interviews with key informants and planned interviewees. Any questions or clarifications needed were discussed through telephone calls from the field, as such course corrections and direction was assured.

3.3. LIMITATIONS and LESSONS LEARNED

During the SQUEAC implementation, as few issues and limitations were encountered, which were mitigated with the identification of lessons-learned.

The limitations and lessons-learned included:

- There was a general lack of information from program implementers in relation to maps and lists of villages and community based activities. Maps are an issue at a national level, with no detailed maps available indicating roads or health facilities. As such, the consultant identified through discussions with key informants, general locations and distances between known HFs and OTP sites and villages for fieldwork.
 - There was little to no information available on CV activities and quality of activities at the community level, which made it difficult to investigate this aspect of CMAM programming and obtain a clear picture of all that is done.
- At the time of the SQUEAC, there was no access to the SC, as the principal physician at the general hospital was not in the state at the time of the data collection and there were no children in the SC to witness regular activities. Therefore, no evaluation or interviews were conducted for the SC during the SQUEAC.
- The SQUEAC was conducted during the annual review of the WINNN program, occupying much of the program staff time during the implementation and fieldwork of the SQUEAC. As such, the depth of analysis could potentially be affected; however, the consultant used the enumerators and locally based key informants to mitigate this issue.

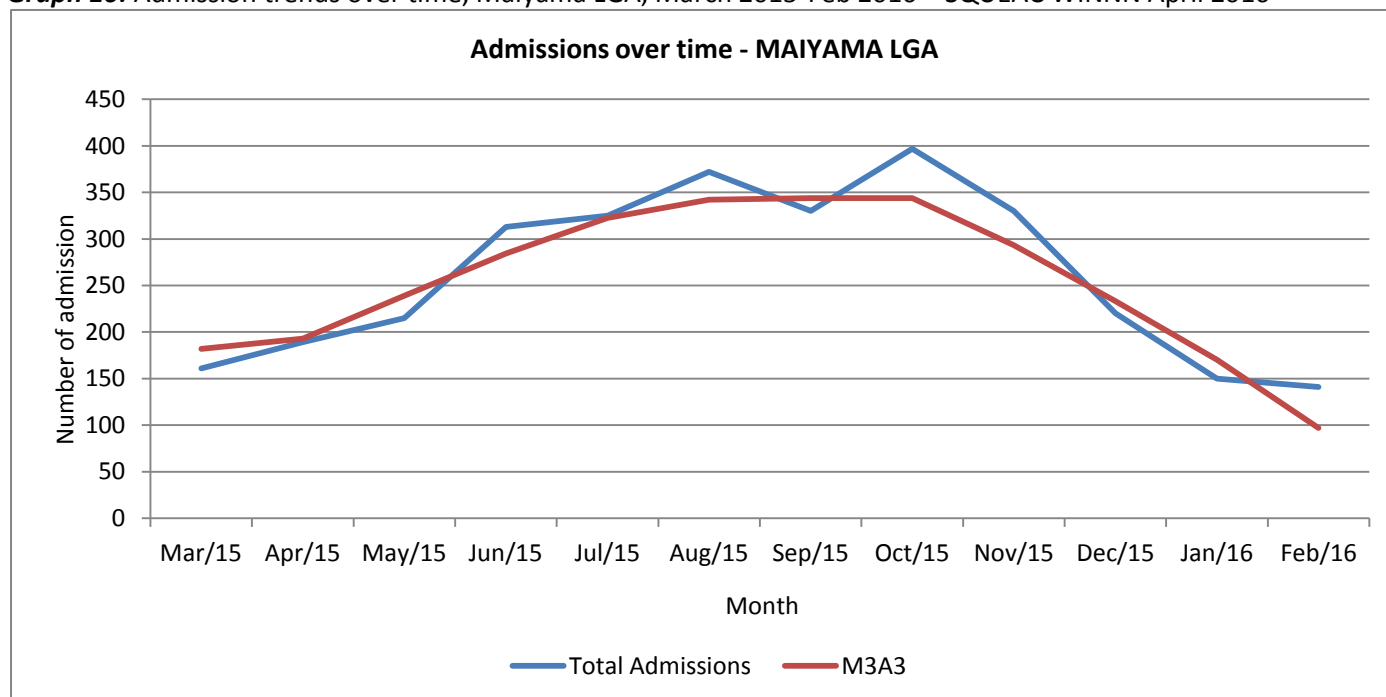


4. INVESTIGATION PROCESS AND RESULTS

4.1. STAGE 1 – QUANTITATIVE DATA ANALYSIS

4.1.1. ADMISSION TRENDS

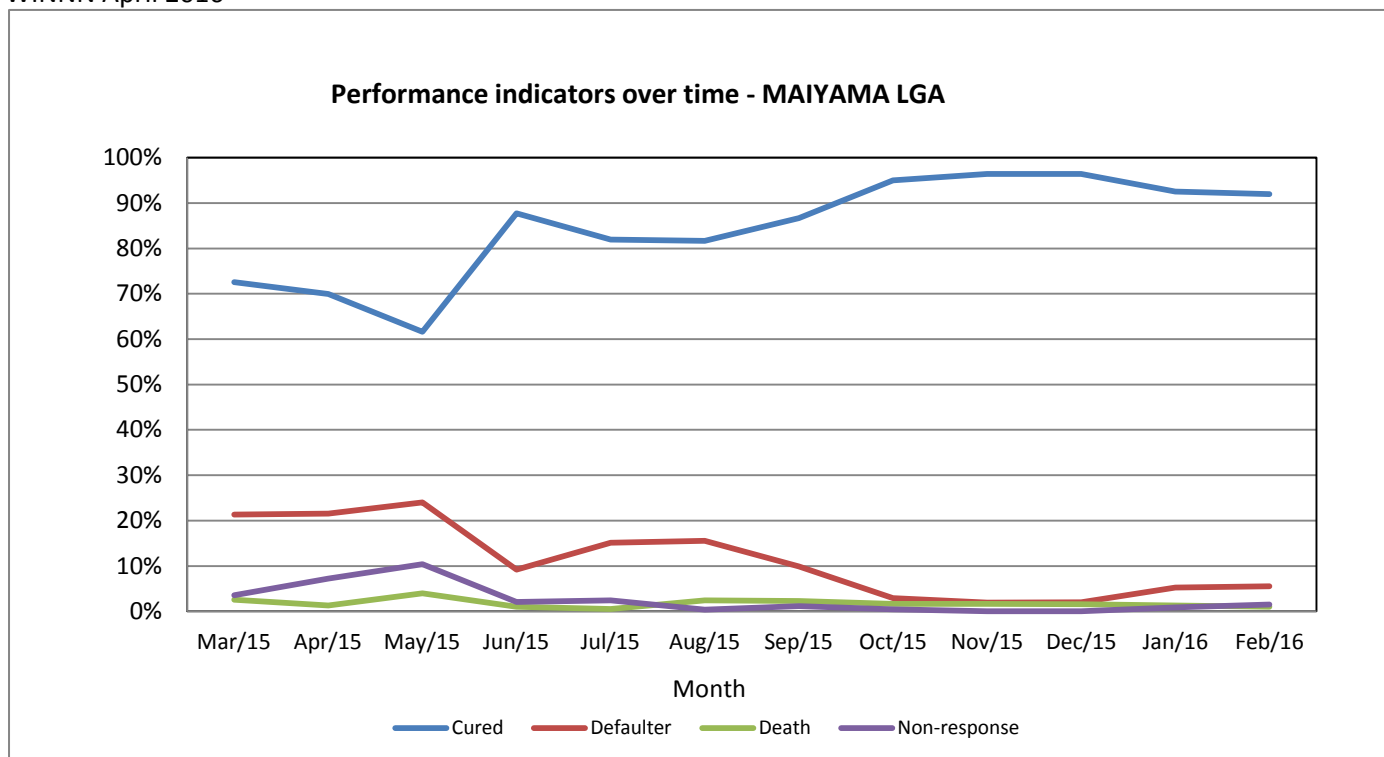
Graph 10: Admission trends over time, Maiyama LGA, March 2015-Feb 2016 – SQUEAC WINNN April 2016



- The evolution of admissions is presented with a smoothed curve (M3A3) to demonstrate the global trend in admissions, by using the average of the previous and actual month to create the curve.
- The admissions trend of March 2015 to February 2016 demonstrate a smooth curve with only one general peak of admissions, during the annual hunger gap, with a peak in August and October 2016.
- The two subtle peaks of admissions in August and October could be explained by late attendance, after the planting and first harvest period and waiting for the rains, or moreover the rivers and physical blockages, to diminish or reduce prior to accessing OTP health services.
- For the evaluated 12 month period, a total of 3143 children were admitted.

4.1.2. PERFORMANCE INDICATORS

Graph 11: Evolution of performance indicators over time, Maiyama LGA, March 2015-Feb 2016, 2015 – SQUEAC WINNN April 2016

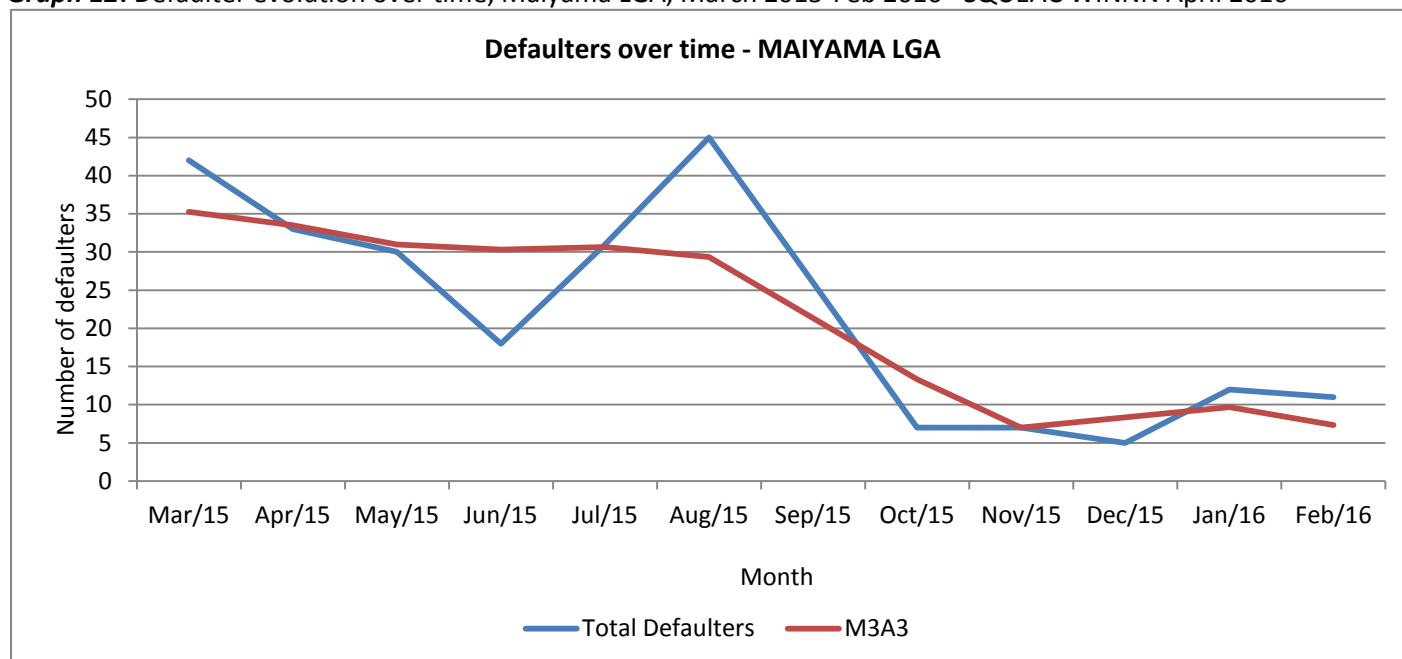


- The evolution of performance indicators presented reveal that as defaulter rates improve, diminish, the cured rates improve, increase.
- In general, over the one year time period, cured, defaulter and non-response rates improved, starting in June 2016 and have since fallen within the SPHERE standards of performance indicators.
- This improvement is largely due to WINNN team and MoH partner efforts to address the high defaulter rates in Maiyama LGA – through improved defaulter monitoring and reporting, and some improvements to defaulter follow-up at the HF level (cf. Section 4.1.3)

4.1.3. DEFAULTER ANALYSIS

During the stage 1 investigation of this SQUEAC, the issue of defaulters became apparent, despite significant improvements in ensuring that defaulter rates are better controlled and within SPHERE standards, below 15%. Therefore, defaulter information was further collected and analysed from OTP card records for the one year time period, looking at number of visits prior to defaulting and distance from the OTP-site for defaulters.

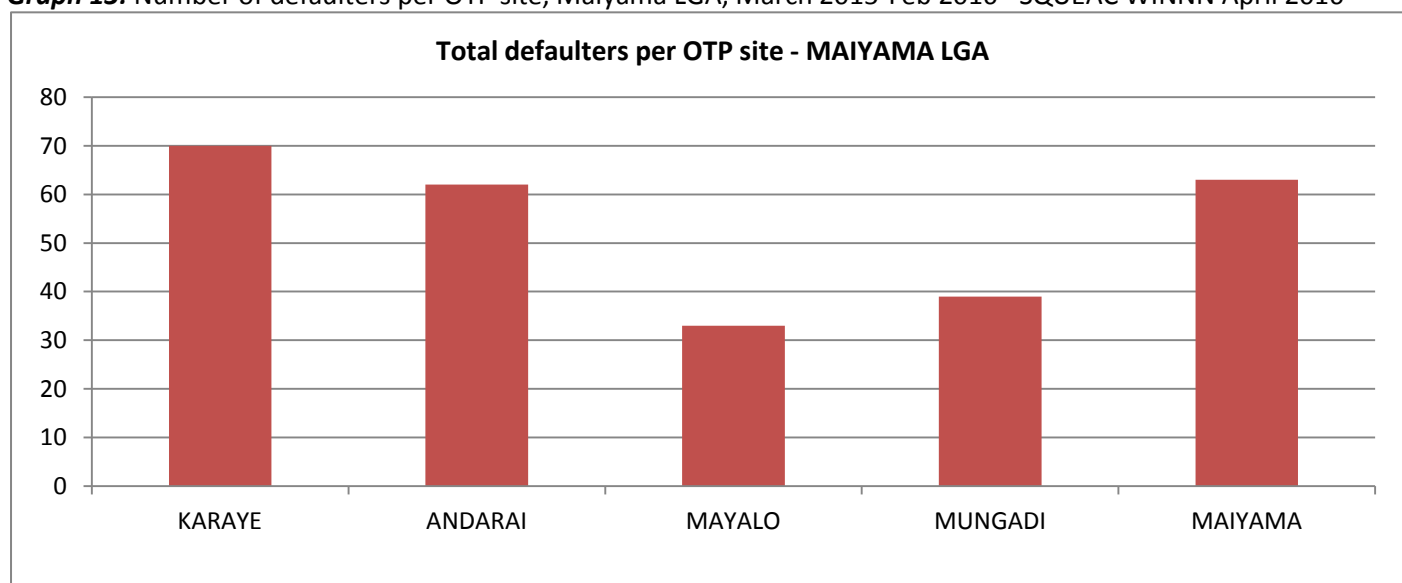
Graph 12: Defaulter evolution over time, Maiyama LGA, March 2015-Feb 2016– SQUEAC WINNN April 2016



- The evolution of defaulters is presented as raw data total defaulters, and with a smoothed curve (M3A3), which takes the previous and current month average defaulters.
- In general, the graph shows a decreasing trend in defaulters, particularly when analysing the smoothed curve with a decreasing trend in defaulters since June 2015.
- The graph shows a peak of defaulters during the hunger gap, likely due to the busyness of the planting and harvest season, as well as river and road blockages during the rainy season.
- In total, based on MoH reports, there were a total of 267 defaulters from March 2015 to February 2016.

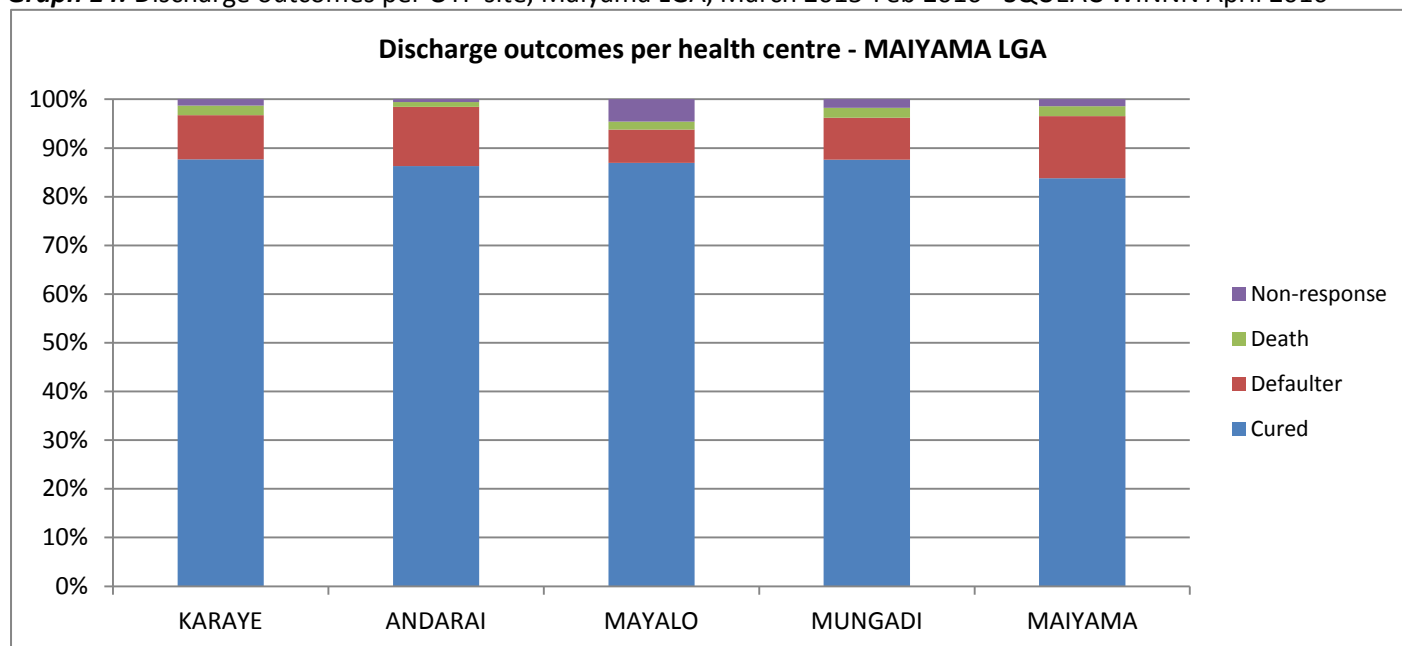
The following graph presents the total number of defaulter cases per health facility with OTP sites, five sites; with graph 14 presenting the percentage of defaulters and discharge outcomes per HF. (NB: The information in these graphs is from official state reports on performance indicators).

Graph 13: Number of defaulters per OTP site, Maiyama LGA, March 2015-Feb 2016– SQUEAC WINNN April 2016





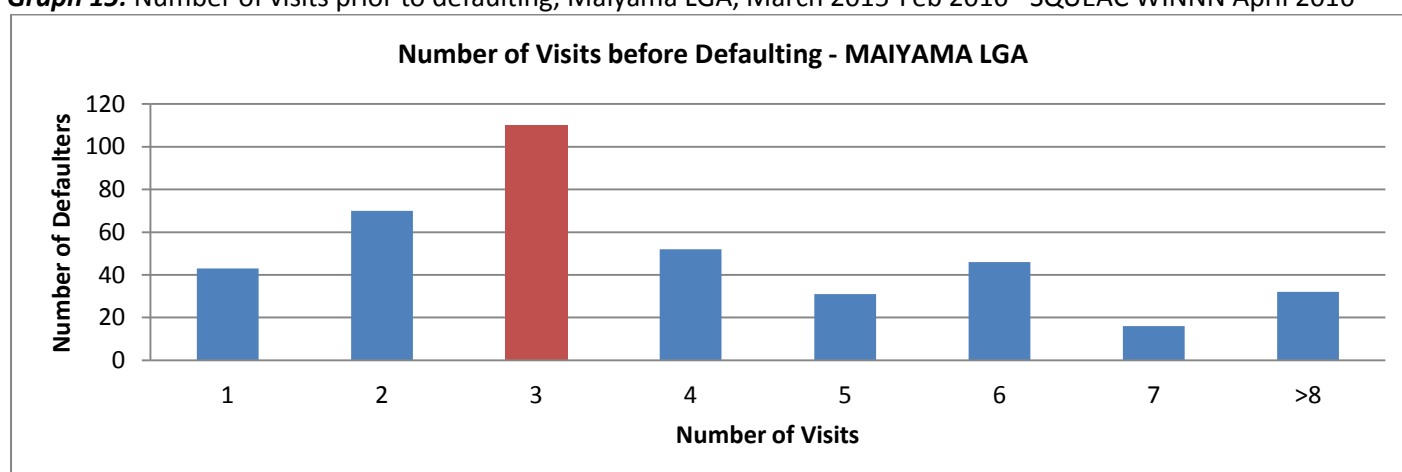
Graph 14: Discharge outcomes per OTP site, Maiyama LGA, March 2015-Feb 2016– SQUEAC WINNN April 2016



- Defaulter rates per HF are relatively well managed, with no significant differences between OTP sites. A slight difference can be seen in Andarai and Maiyama OTP sites, with slightly higher rates of defaulters.
- Mayalo PHC seems to have the largest percentage of non-responders over the year; however this percentage has diminished in recent months and is largely due to a correction in reporting made in early 2015.
- All OTP sites have similar rates of death cases.

Further information on defaulters was collected by enumerators, through tally sheets, in all five OTP sites, to further understand and analyse the performance of OTP sites through quantitative data. To further comprehend the defaulter situation, information was collected on the number of visits made prior to defaulting, to determine if children are defaulting prematurely or late. The findings are presented in Graph 15.

Graph 15: Number of visits prior to defaulting, Maiyama LGA, March 2015-Feb 2016– SQUEAC WINNN April 2016

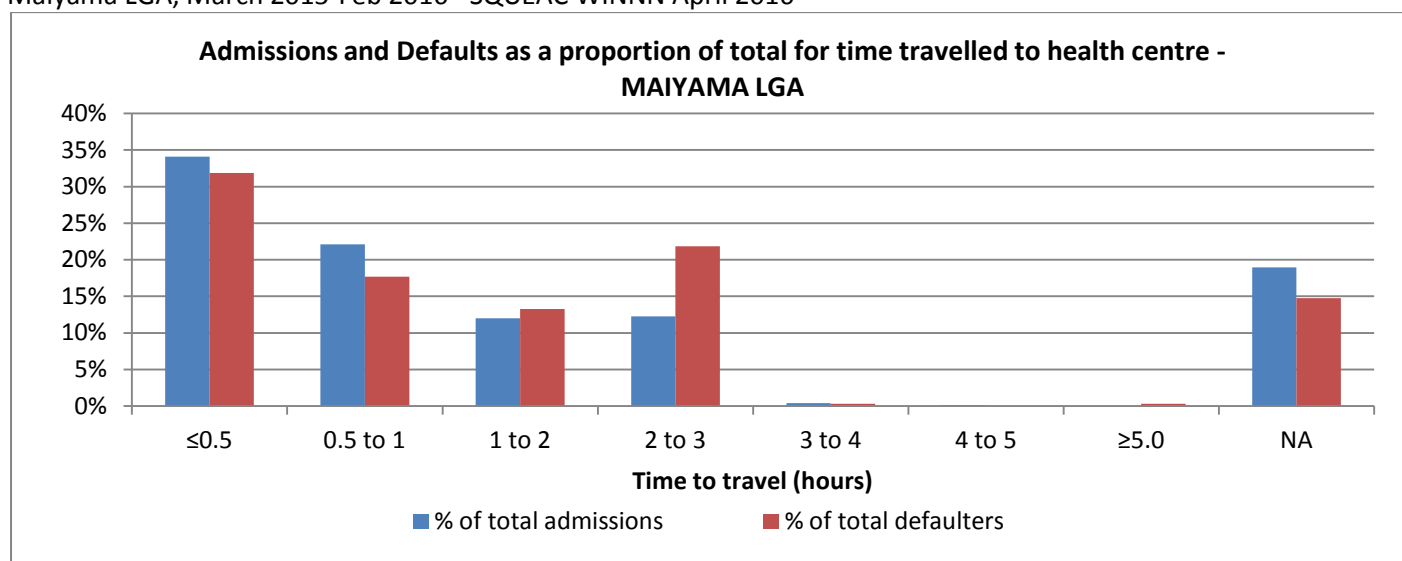


- Analysis of the number of visits prior to defaulting indicates that the majority of children are defaulting early, prior to 6 visits, with a median of 3 visits. This phenomenon indicates that children are likely not defaulting because caretakers are witnessing their health improving, but due to other limiting factors.
- Further analysis per OTP site, indicated that Mayalo PHC was the only OTP site with a median defaulter rate of 5 weeks, indicating that perhaps at Mayalo, there are less limiting factors for attendance.



During stage 1 data collection, efforts were made to collect information to further understand defaulter rates, as compared to distance, as presented in graph 16.

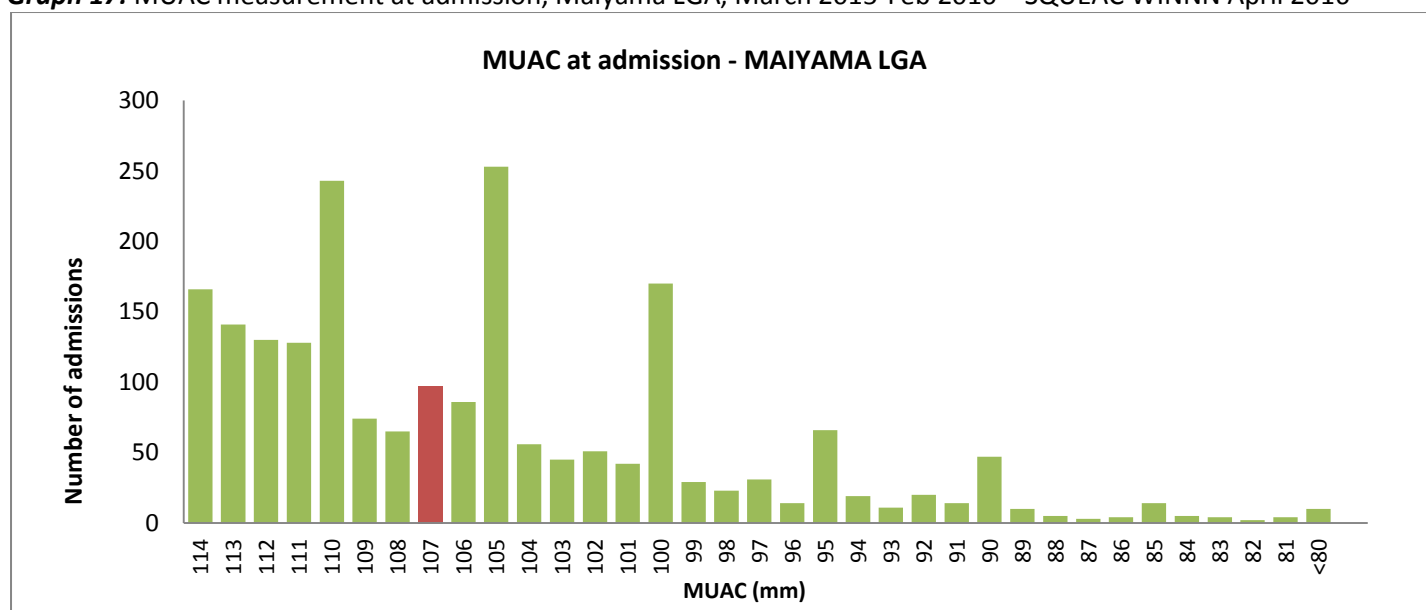
Graph 16: Time to travel (in hours) from village to HF, comparing total admissions with number of defaulters, Maiyama LGA, March 2015-Feb 2016– SQUEAC WINNN April 2016



- Graph 16 analysis indicates that as distance increases from the HF, defaulter percentage increase for distances greater than 1 hour.
- The difference between the percentages of defaulters as compared to percentage of admissions is most pronounced as the time to travel increases, such as between 2 to 3 hours. Indicating that distance becomes a limiting factor for defaulters the further they are from the HF.
- Further analysis reveals that this phenomenon is most pronounced in Mungadi PHC catchment area, with the majority of defaulters coming from a distance of 2 to 3 hours.

4.1.4. MUAC MEASUREMENT AT ADMISSION

Graph 17: MUAC measurement at admission, Maiyama LGA, March 2015-Feb 2016 – SQUEAC WINNN April 2016



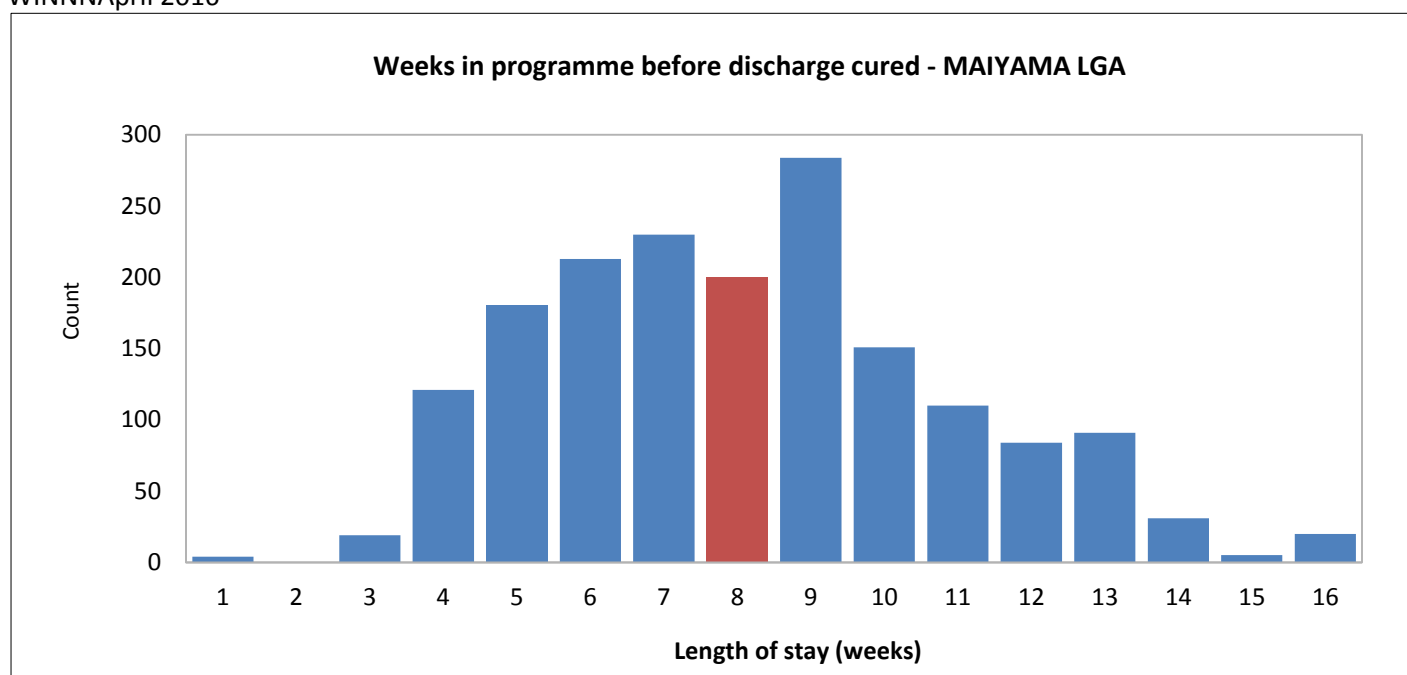
- Analysis of graph 17 indicates there is a clear measurement preference for MUAC at each 5mm or 0.5cm interval, as seen with peaks of admission rates at 11.0cm, 10.5cm, 10.0cm, 9.5cm, 9.0cm and 8.5cm. This

phenomenon of digit preference in measurement has a negative impact on program quality at the HF level, as these measurements are meant to be more uniformly distributed.

- The median admission based on MUAC is at 10.7cm (107mm), which is quite low, indicating that many beneficiaries are coming late, missing the opportunity to obtain OTP treatment at the very start of SAM state.
- Further indications in interviews suggest that many factors are discouraging children from obtaining early detection OTP treatment (i.e. closer to 11.4cm or 11.3cm at admission): poor quality management of measurements at the HF level, poor capacity of referral system from CVs leading to rejection, husband refusal, distance and opportunity costs, and the preference for traditional and less expensive home-based treatments first.

4.1.5. LENGTH OF STAY (LoS)

Graph 18: Number of weeks in program for cured cases, Maiyama LGA, March 2015-Feb 2016 – SQUEAC WINNN April 2016



- The median length of stay (LoS) is at 8 weeks for all OTP sites, indicating a longer than normal length of stay.
- Many factors influence the length of stay, including late admissions (seen from analysis of MUAC at admissions), poor measurement management throughout the treatment, the state of hygiene and health of the beneficiary, which could negatively impact the length of time it takes to be cured.
- Further analysis per OTP site indicated that Mungadi PHC had a large peak of discharged cured at 9 weeks, perhaps indicating a misunderstanding on cured criteria, or a systematic preference for discharging at 9 weeks, regardless of protocols. Andarai PHC was also different, with a median LoS of 7 weeks, perhaps indicating a slightly improved performance rate, although not significant.

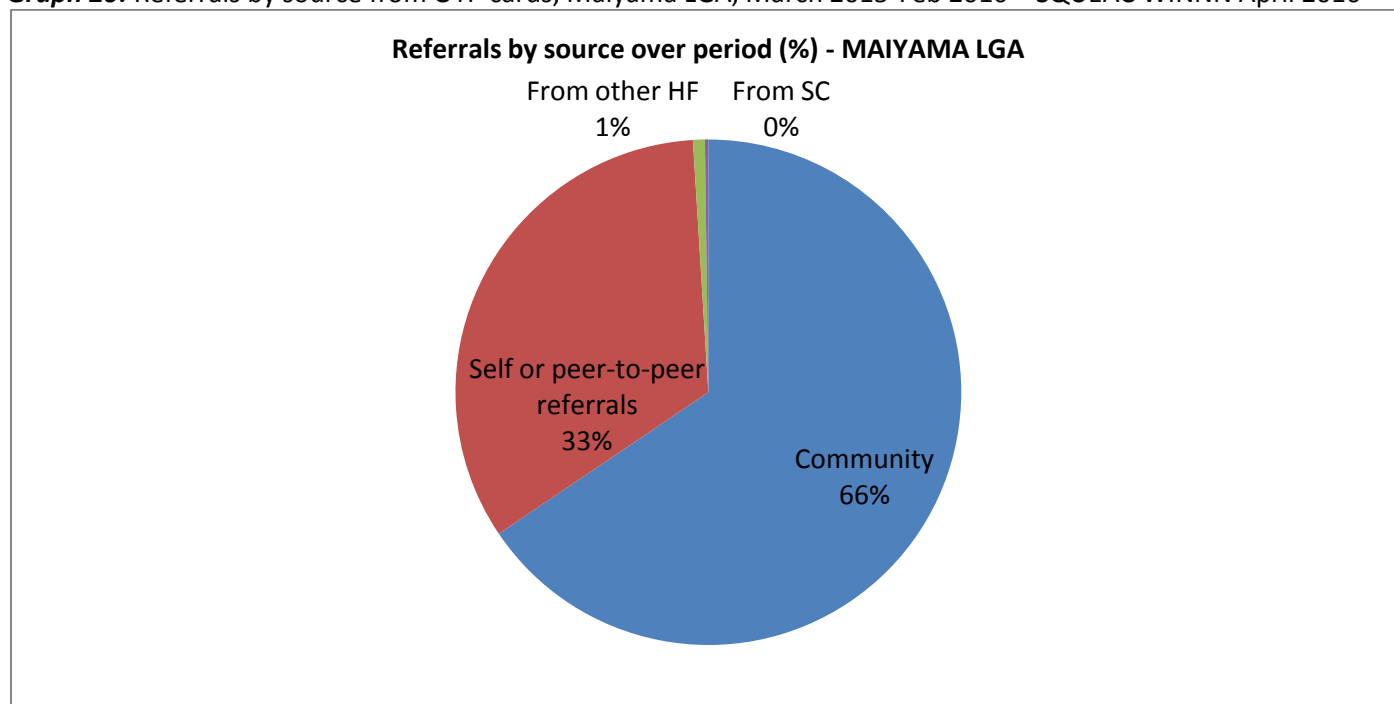
4.1.6. COMMUNITY MOBILISATION COMPONENT – REFERRALS

The community mobilisation component of the WINNN program in Maiyama LGA does not have reports or documents to follow CV activities. This is partly due to the low level of comprehension and education of the CVs, where reporting becomes difficult. As such, no information was available for analysis during stage 1 of the SQUEAC investigation. During quantitative data collection, information from the OTP cards was collected on the referral type, including, from the community (moreover CVs), self or peer, from another HF or from the stabilisation centre (SC).

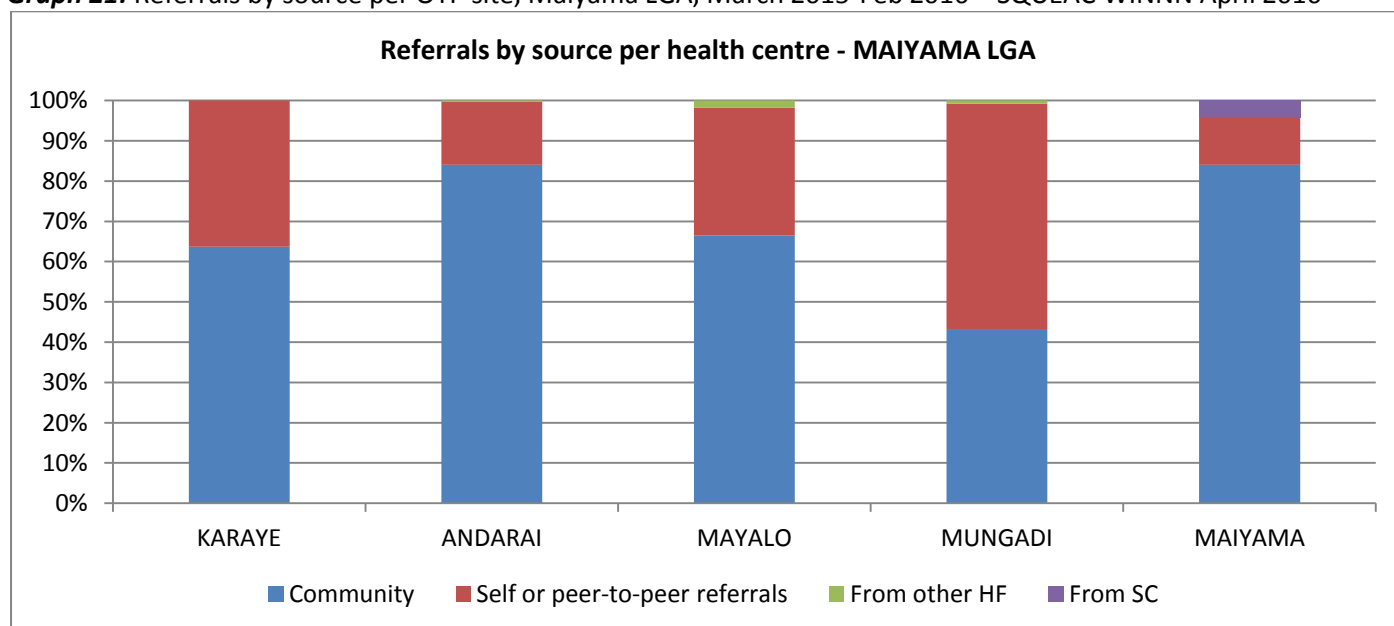
The accuracy of this information cannot be confirmed as the information was only available for 58% of all admissions (1846/3143). The information collected is presented in the graph 20 and 21 below.



Graph 20: Referrals by source from OTP cards, Maiyama LGA, March 2015-Feb 2016 – SQUEAC WINNN April 2016



Graph 21: Referrals by source per OTP site, Maiyama LGA, March 2015-Feb 2016 – SQUEAC WINNN April 2016



- The majority of referrals admitted to the program, 66%, were indicated to be from the community or CVs; with 33% coming from self- or peer-referrals. Very little came from other HF or the SC, at 1% and 0% respectively.
- With only 5 out of the 11 wards assuring OTP services, it is expected to see more referrals from other HFs, non OTP site HFs, referring children who were measured and identified as malnutrition. Therefore indicating there is a weak inter-HF referral system and likely poor systematic screening at non-OTP site HFs.
- Comparing between HFs, it seems that Mungadi PHC has the least referrals from CVs (at 43%), with Maiyama and Andarai having the largest percentage of referrals from the community (both at 84%).
- According to some of the interviews with community members and caregivers of beneficiaries, some of the caregivers attended the program because they were told by their neighbours who had benefited from the CMAM program or had heard about the program on radio jingles. Some caregivers confirmed that they were



referred by their community volunteers. A caregiver said her husband heard of the program through radio jingles and told her to take their malnourished child to the HF.

4.2. STAGE 1 – COLLECTION and ANALYSIS of QUALITATIVE DATA

After the data collection and analysis of quantitative data, the 15 enumerators (8 women, 7 men)⁸ were trained on qualitative data collection techniques and interview guides. All SQUEAC participants, enumerators and WINNN program staff participated in a two-day training session on SQUEAC and data collection techniques for both stage 1 and stage 2 data collection; with an emphasis on qualitative data and interview techniques. The consultant and WINNN program staff conducted supervisions of the enumerator data collection for 5 out of the 9 days of data collection (security constraints was the limiting factor for supervisions).

The qualitative data collected and types of interviews conducted at the community and health system levels are presented in Table 9⁹, with a total of 44 interviews completed.

Table 9: Individual and focus group interviews conducted for qualitative data collection – SQUEAC WINNN April 2016

Personnel Interviewed	Type of Interview	Number of Interviews Conducted
Community Health Workers (CHW) or Junior CHW	Semi-structured interview	5
Caretakers of CMAM treatment beneficiaries	Semi-structured interview	4
	Focus group discussion	1
Traditional leaders, community leaders or religious	Semi-structured interview	6
	Focus group discussion	2
MoH personnel	Semi-structured interview	2
Community volunteers (IYCF or CMAM)	Semi-structured interview	6
	Focus group discussion	1
Local community based organisations or teachers	Semi-structured interview	4
Traditional healers	Semi-structured interview	2
WINNN program personnel (SCI)	Semi-structured interview	2
Women or mothers from the community	Semi-structured interview	4
	Focus group discussion	2
Men or fathers from the community	Semi-structured interview	2
	Focus group discussion	1

Information was collected, through interview guides and the enumerators, on a daily basis, to build and confirm the different negative and positive factors that affect CMAM access and coverage – called the barriers and boosters of coverage; thus assuring that information collected was exhaustive throughout the process. Using the different sources of information as well as the different means or methods of data collection, the investigation was able to collect and triangulate information to confirm barriers and boosters. The information, grouped into barriers and boosters, is further described and presented in section 4.2.1.

4.2.1. IDENTIFICATION OF BARRIERS and BOOSTERS

⁸ See the complete list of enumerators in Annex 6.

⁹ See the complete interview matrix in Annex 8.

Throughout the data collection and analysis component of stage 1, the data collection approach, called boosters, barriers and questions (BBQ), was used to ensure that key principals of exhaustivity and triangulation were assured throughout the SQUEAC.

Using the qualitative data collected through interviews and focus group discussions, the list of barriers and boosters, was further evaluated and described to understand the nuances and influences of these aspects on coverage. Some common barriers were combined, as the factors are similar and the effects are accumulative on coverage, these aspects are discussed in detail in the Table 10 below. In addition, the barriers and boosters were divided into common themes of coverage, as presented in Table 11.

Table 10: Description of barriers effect on coverage – SQUEAC WINNN April 2016

BARRIER	Description
Distance /Poor roads/ High river, difficult passes (rainy season), high opportunity costs	Distance was commonly cited as a barrier, not only for physical distance, but the effect of distance on subsequent opportunity costs, such as the financial cost of transportation, the time it requires to access the HF, as well as the availability of transportation. Although the SQUEAC was not conducted during the rainy season, many interviews revealed that during the rainy season there are rivers or waterways created, blocking passageways or roads used during the remainder of the year – subsequently understood as having a negative effect on early admissions and likely increasing the likelihood of defaulting.
Lack of action on community mobilisation strategy and poor sensitisation plan – poor f/u or monitoring of to CV activities, poor follow-up of defaulters by CVs	Efforts have been made through the WINNN program to improve the community mobilisation component for CMAM treatment, including supporting 150 community volunteers (CV) as part of the network. In addition, there are a total of 550 CVs working on IYCF messages – a complementary and preventative aspect of malnutrition management. Despite these efforts, there is a general lack of community mobilisation direction and support for the CVs, including a lack of supervisions, inconsistent or incomplete training, no provision of on-the-job quality corrections on measurements and no follow-up on referrals. In addition, through interviews and observations it was clear that there is no understanding by WINNN staff and state MoH on the location or reach of the CMAM CVs – as there are no mappings of CV activities, there are no reporting structures to understand referrals and anthropometric measurement quality, and a mixed to every two months, based on CV interviews.
Sense of rejection by caretakers referred to OTP	Caretakers who are referred to the OTP-site from CVs and are not admitted to the program often have a sense of rejection, which can negatively affect the perception of the CMAM program. Often, this is either due to poor referrals from the CVs and a misunderstanding of admissions criteria, or due to poor quality measurements of MUAC by CVs or HF staff. In Maiyama, it has been seen that this translates into cases of late admissions, as caretakers wait until they are assured to receive treatment for their child.
Lack of screening in all villages (CV coverage outside OTP areas)	In addition to a poor community mobilisation strategy, the CVs seem to be located only in and around the OTP sites (either within the same village with the HF/OTP site, or in the villages within the ward), thereby limiting the geographic coverage of active screening and sensitisation activities to those wards with OTP sites. This aspect was difficult to confirm, as there are no mappings of the area and limited lists of villages actually containing CMAM CVs.
Perception of lack of CV motivation	In a few interviews with CVs and CHWs, as well as MoH staff, the topic of financial motivation for CVs was addressed and seen as a necessity to ensure CV activities. It was understood that at the start of programming (in early 2014) there was a financial motivation provided, however this practice was replaced with the provision of refreshments during meetings. As such, there is a common demand for this to return and may have an effect on coverage depending on the quality of work



	conducted by CVs (active case finding and follow-up work) with or without financial motivation.
Lack of OTPs in all health facilities or wards	In Maiyama LGA there are a total of 5 OTP sites, running on a weekly basis, covering a total of 11 wards. Through interviews it was indicated that the spatial distribution of OTP sites, ensures about equivalent catchment area; however, this was not confirmed without a true mapping and understanding of population size in the full catchment area, which was unavailable. Regardless, the fact that there are no OTP sites available in all HFs and/or wards has a negative impact on coverage, and the accessibility issues of distance and opportunity costs, as well as early admissions.
Lack of quality assurance during OTP-site days: long wait-times, lack of HF staff, lack of space, lack of precision in measurements	In addition to interviews conducted with OTP staff and caretakers of beneficiaries, observations were made during the functioning of three out of the five OTP sites. Although the CMAM program is well known and appreciated, the factors of long wait-times, lack of space and lack of HF staff available on OTP days has a negative effect on the perception of the program. For example, during OTP site days, often new admissions/referrals are measured only at the end of the day (after previously admitted children are seen), thus diminishing the perception of quality of care for new caretakers in the program, and potentially affecting whether or not they come back for follow-up or what messages are passed at the community level with their neighbours. Observations during OTP-site days, combined with quantitative data analysis on admissions, also revealed a lack of precision and care in anthropometric measures. HF staffs were seen having difficulty measuring the mid-point of the upper arm, or simply not identifying a mid-point and placing the MUAC tape directly on the arm, or only using 8cm as the mid-point for all children. As such, the quality assurance of admissions and true progression during treatment of beneficiaries cannot be assured. This may have an effect on longer length of stay, higher defaulting cases and poor understanding of admissions and exit criteria.
Trained HF staff transferred or unavailable	In Maiyama, some of the trained HF staff were either transferred out of the LGA or moved to another HF (with or without OTP) and then replaced with untrained staff. As such the level of training or experience cannot be assured at the OTP sites, and is outside the control of the WINNN program.
Lack of supportive supervisory visits from LGA and State officials	The involvement and interest from state and LGA level MoH personnel has an influence on coverage as their decisions, recommendations and observations are important for course corrections and quality improvements. Supervisory visits were limited over the past year due to time and financial constraints, as well as competing priorities. Despite a good coordination and collaboration between WINNN program staff and MoH personnel at state and LGA levels, supervisory visits are difficult to plan and execute.
Stigma – shame in attending HF for malnutrition (or other childhood illness)	Almost half of the interviews revealed that there is a sense of stigma and shame around having a child with malnutrition. This seemed to translate into a sense of understanding of the disease, that no one wants their child to be sick or suffering, and very few indicated there were any negative repercussions based on the sense of stigma. Most indicated that this meant that ‘no one will want to carry your child’, which was understood to mean that if malnutrition is recognized, then people don’t want to approach the child.
Refusal admission/transfer to SC	During data collection, the stabilisation centre (SC) was not open, as there were no current beneficiaries and the principal medical officer was absent. During a brief visit to the general hospital, which housed the SC, there was no one available who could show us the facility or room, or participate in the interview. During HF and community level interviews, it was apparent that transfers to the SC are difficult, as many transfers do not have permission from their husband, nor the financial or community support to stay during the complete length of treatment. Referral information suggests that transfers are also only occurring from within the



	Maiyama catchment area directly, and not more distant wards – further indicating that distance from the SC and the high opportunity costs preclude participation in SC level of care. Indeed, the level of care and quality indicates this is a point of weakness in CMAM programming.
Husband refusal, lack of control over finances, poor decision making power → late admissions	A large majority of interviews revealed that a common barrier to access is the husband refusal to attending the HF. Men are declared to be the decision makers of the household and even in their absence, their family (the wife's in-laws) are the decision makers. As such, there seems to be very little female caretaker power over decisions to attend the HF, attend early or on time, have the finances available to attend or can attend alone; thus leading to many unnecessary and late admissions.
Preference of traditional treatment prior to or instead of HF attendance	From interviews, it was evident that community members have chosen different methods of treating children with malnutrition cases in their communities. Some respondents reported that malnourished children are taken to the HFs for treatment, while others reported that they go to traditional healers, or use of herbs to treat malnutrition. The choice of traditional treatments is also linked to the high opportunity costs of attending the HF, with local herbs or traditional practices costing less. Many caregivers indicated they previously had taken traditional medicine prior to attending the HF, which indicates that even though they are attending the HF, CMAM treatment is delayed and can be longer or have more complications. Additionally, the poor health seeking behaviour also confirms the low median MUACs on admission as many SAM cases are presented late at the CMAM HFs for treatment, after they have deteriorated.
Lack of awareness and sensitisation sessions for influential men and decision makers	Based on interview data, only half of the men in the community – community or traditional leaders, men or fathers, and religious leaders – interviewed understood about malnutrition or had heard of the program. Almost 80% of the interviewees had never participated in an awareness raising session from CVs or other CMAM/IYCF interventions; whereas, almost all recommendations for improvement included identifying opportunities to include such men as decisions makers and leaders in the community. With a poor implication and understanding of men and influential men, late admissions or refusal to participate and poor accessibility will continue to be apparent.
Lack of understanding of malnutrition	The qualitative interviews revealed that malnutrition was recognized (through photos of marasmus and kwashiorkor) in the communities as almost all interviewees were able to identify 'Tamowa' (Hausa for malnutrition) as the illness. However, when further questioned to identify signs and symptoms, causes and effects of malnutrition, comprehension decreased significantly as the understanding of community members about malnutrition is based on visible signs, which usually manifest when the cases have deteriorated. The signs and symptoms commonly cited included 'big head', 'swollen belly', 'loss of appetite', 'emaciation or weight loss' – generally the visible signs. With causes including 'poor personal hygiene' or 'women were breastfeeding while pregnant' (called Ciwon Yinwa in Hausa). Lastly, very few interviewees were able to identify effects of malnutrition, including HF workers and CVs, with only 6 answers truly reflecting the effects, cited as 'death' and 'poor growth'.

Table 12: Thematic list of barriers and boosters – SQUEAC WINNN April 2016

Theme	Barriers	Boosters
Geographic	- Distance - Poor roads - Lack of OTPs in all health facilities	Delivery of RUTF assured
Seasonal	High river, difficult passes (rainy season)	
Socio-cultural	- Late admission: preference of traditional treatment, husband refusal, lack of finances, etc. - Lack of awareness and sensitisation sessions for influential men and decision makers - Lack of understanding of malnutrition - Sense of rejection by caretakers	- Good appreciation of CMAM program - Good awareness of CMAM program
Financial	- Perception of lack of CV motivation - Lack of financial resources to attend health facility	Availability of state and partner financing for CMAM and capacity building
Program Quality	- Lack of action on community mobilisation strategy and poor sensitisation plan – lack of screening in all villages (CV coverage outside OTP areas) - Lack of quality assurance during OTP-site days: long wait-times, lack of HF staff, lack of space - Inconsistent care provided – lack of quality assurance practices - Lack of supportive supervisory visits from LGA and State officials - Poor follow-up of defaulters - Trained HF staff transferred or unavailable	- No stock-outs and improved stock management - Availability of IYCF and CMAM community volunteers (complementary programming)

The barriers and boosters were triangulated by source and method used to obtain such information. The sources and methods used are listed in Table 13, while barriers and boosters were tabulated in Table 14.

Table 13: Legend of sources and methods for triangulation of barriers and boosters determination – SQUEAC WINNN April 2016

Source	Method
1 Health facility staff/CHWs	A Semi-formal interview
2 Community volunteers (CV)	B Focus group discussion
3 Community leaders/traditional leaders	C Observations
4 Members of the community – Women	D Case study
5 Members of the community – Men	E Informal interview/discussions
6 Caretakers of CMAM beneficiaries	F SWOT analysis
7 Traditional healers	
8 MoH/government officials	
9 NGO program staff	
10 Community based organisations	
11 Religious leaders	
12 Teacher/headmaster	

Table 14: Source and method in the triangulation and weighing of barriers and boosters – SQUEAC WINNN April 2016

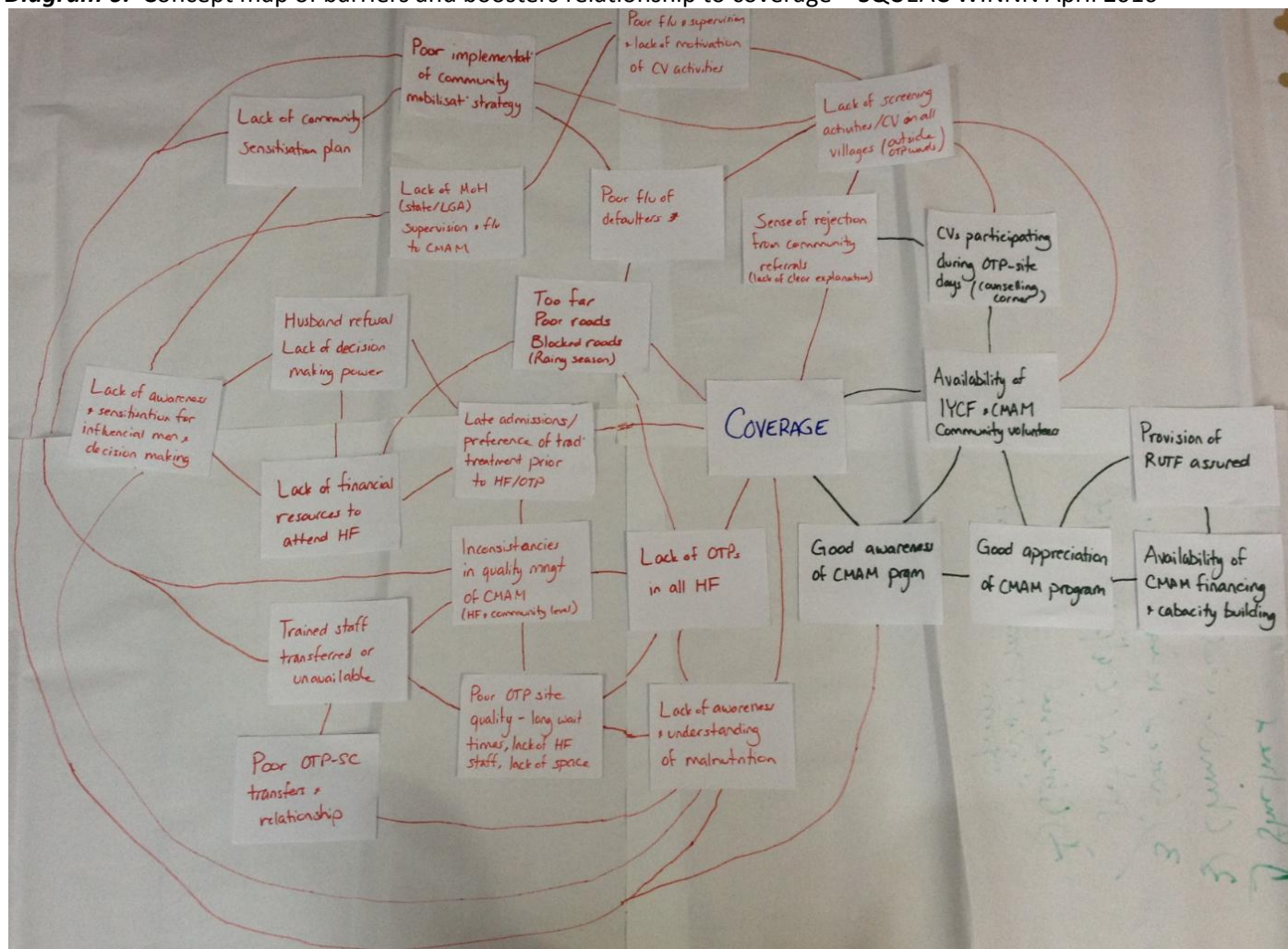
BARRIERS	Triangulation	Weight
Distance /Poor roads/ High river, difficult passes (rainy season), high opportunity costs	2A, 3A, 8E, 1A, 9A, 4/5F, 5A, 6A, 9C, 8C	4
Lack of action on community mobilisation strategy and poor sensitisation plan – poor f/u to CV activities, no monitoring	9C, 1A, 8E, 8C	4
Lack of screening in all villages (CV coverage outside OTP areas)	4A, 8C, 1A, 2A, 9C, 9E, 2C	3
Lack of quality assurance during OTP-site days: long wait-times, lack of HF staff, lack of space	1C, 9C, 3A, 6A	2.5
Inconsistent care provided – lack of quality assurance practices	8E, 9C, 1A	1
Refusal admission/transfer to SC	1A, 9C, 9E, 4/5F	3
Lack of supportive supervisory visits at LGA and State level	8E, 9C, 1A	2.5
Poor follow-up of defaulters	4A, 9A, 9C, 8C, 2A, 10A	1
Perception of lack of CV motivation	1A, 2A, 10A	3
Stigma – shame in attending HF for malnutrition (+other childhood illness)	2A, 5A, 4A, 7A	2
Trained HF staff transferred or unavailable	9C, 8E, 2A	3
Husband refusal, lack of control over finances, poor decision making power → late admissions	1A, 4A, 9C, 4/5F, 6A, 11A	3
Preference of traditional treatment	6A, 7A, 9C, 5A, 11A, 1A	1
Lack of awareness and sensitisation sessions for influential men and decision makers	3B, 9C, 8C, 6A, 2A, 12A	2
Lack of understanding of malnutrition	4A, 8E, 3A, 3B, 7A, 6A, 2A, 2C, 11A	2
Sense of rejection by caretakers	4/5F, 4A, 9A, 6A	2
Lack of OTPs in all health facilities	4/5F, 5A, 9A, 11A	4
TOTAL		43
BOOSTERS	Triangulation	Weight
Good awareness of CMAM program	3A, 5A, 4A, 9A, 12A, 3B, 7A, 6A, 1A, 10A, 2A	5
Good appreciation/acceptance of CMAM	3A, 5A, 4A, 4/5F, 12A, 6A, 1A, 10A, 2A	4
Presence of IYCF and CMAM CVs (complimentary programming)	11A, 4/5F, 9A, 2A, 10A, 12A	5
CVs participating during OTP site days (ex. Counselling corner)	6A, 9A, 2C	3
CMAM financing and management is assured – building capacity and good relationship (WINNN/MoH/community)	9A, 9C, 8E, 1A	4
Provision of RUTF assured on OTP days – Improved stock management – transportation assured by WINNN	1A, 9C, 9A, 8E	3
TOTAL		24

Based on the identified barriers and boosters, it was decided to conduct a weighing exercise to identify potential priority areas and as well to initiate discussions on the component as a whole. The weight was based on a scale from 1 to 5, with 5 representing a factor having the most impact on coverage. With the coverage team, which included WINNN program staff and the SQUEAC consultant, the barriers and boosters were discussed and weighed, as presented in Table 14; for a total of barriers weighing 43, and boosters weighing 24.

A concept mapping of the barriers and boosters was prepared to demonstrate the inter-connective nature of the factors influencing coverage, and are presented in the coverage mindmap in the Diagram 6.



Diagram 6: Concept map of barriers and boosters relationship to coverage – SQUEAC WINNN April 2016



4.3. STAGE 2 – HYPOTHESIS DEVELOPMENT and SMALL SURVEYS

Hypothesis development and testing during stage 2 was conducted during SQUEAC investigations to confirm the location of areas of high and low coverage and the reasons for coverage failure identified during stage 1 using small surveys, small studies and small area surveys. Based on data analysis during Stage 1, it was deemed most relevant to test the different barriers through small survey and a small study.

4.3.1. HYPOTHESES DEVELOPMENT

The small survey was selected to ensure a semi-quantitative focus on a single hypothesis, as it relates to a process that affects coverage and not coverage directly. In this case, the hypothesis is stated as:

Coverage is likely negatively affected by the poor performance quality of CMAM Community Volunteers (CV) as there is poor quality management and limited monitoring of community based active case finding activities.

As such, a community volunteer survey questionnaire¹⁰ was developed for CMAM CVs to evaluate their knowledge and practices within the community in their role as CV and test the stated hypothesis. The results are presented in section 4.3.2.

In addition, there was time and enough enumerators to also conduct a small case study looking at the reason for defaulters, particularly around the OTP site with the largest catchment area to further understand what factors lead

¹⁰ See the small survey questionnaire in Annex 9.



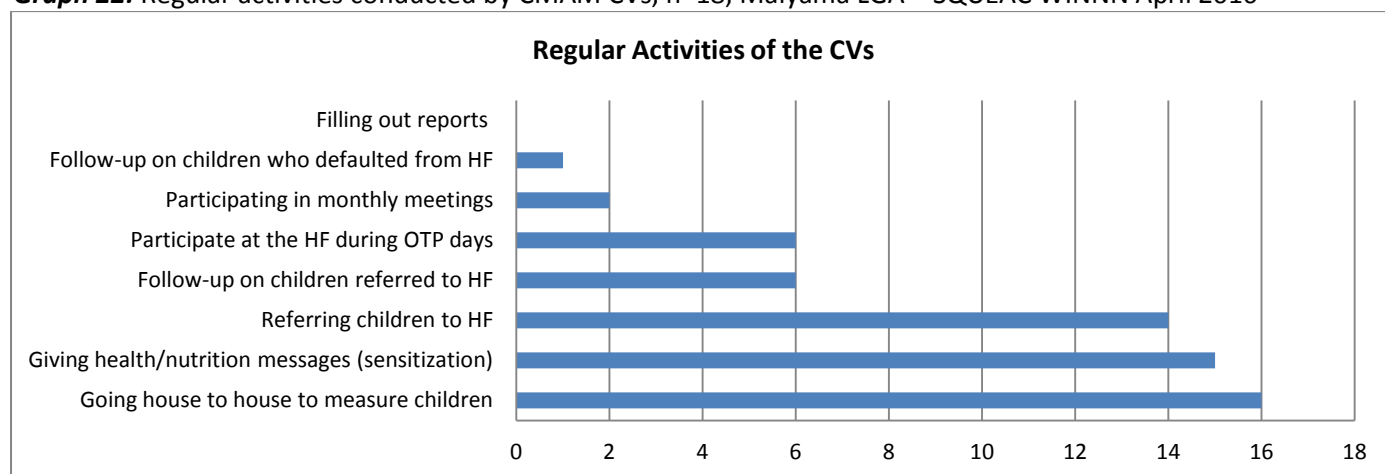
to defaulting. Therefore an additional data collection tool¹¹ was collected to ensure that defaulters within the last 4 months could be documented and visited. The results are presented in section 4.3.3.

4.3.2. SMALL SURVEY RESULTS

The small survey questionnaire was presented and taught to the enumerators prior to going to the field, with a good general understanding of the questionnaire. The teams then spent 2 days in the field going to 22 different villages in search of active CMAM CVs to conduct the survey. A total of 18 out of the 22 were found and agreed to participate in the survey; 3 villages did not have a CMAM CV, nor was there a CMAM CV available in nearby villages to replace their participation, and one village CMAM CV refused to participate, citing not enough time. In total, 12% (n=18) of the total 150 CMAM CVs were interviewed, with a sampling from all 11 wards¹² (with and without OTPs).

The questionnaire began with trying to understand what activities are completed regularly by CVs and what tools are available for said activities. In total, 77% of the CVs (n=14) cited the use of a MUAC tape, of which all were verified to be in good condition by the enumerators, and 89% (n=16) cited the availability of pictures for their awareness raising sessions. In regards to what activities they are responsible for, they indicated the following in Graph 22.

Graph 22: Regular activities conducted by CMAM CVs, n=18, Maiyama LGA – SQUEAC WINNN April 2016



The majority of CVs cited their activities included active case finding, through house to house activities, providing referrals to the HF and providing sensitisation sessions. Less than half of the CVs cited that follow-up on referrals or participating in OTP days was part of their regular duties, and only 1 indicated that follow-up on children who defaulted was part of their duties.

Next, the questionnaire asked about the CVs participation in trainings or if they have ever been supervised. All but one CV (n=17) indicated they had indeed been trained, with the date of training ranging from early 2014 to March 2016 – officially, the WINNN program has initiated two official trainings, in 2014 and 2015. Those that indicated early 2016 are likely referring to the opportunity trainings or on-the-job corrections provided during OTP days at the HF.

A total of 77% (n=14) indicated they had received at least one supervision since they began in their role, with the dates ranging from 2014 to 2016; only 44% (n=8) indicated they had been supervised in the last 4 months. Supervisions were said to be conducted by CHWs or WINNN program staff, with a few citing the LGA nutrition focal point.

The frequency of active case finding and/or sensitisation sessions seems to occur on a weekly basis for the majority, 83% (n=15), with 17% (n=3) conducting activities on a monthly basis.

CVs were then asked to demonstrate the anthropometric measures they were trained to take, using a volunteer child, with enumerators evaluating that each step of measuring Oedema and MUAC were correct. A total of 6 steps

¹¹ See the small case study data collection tool in Annex 10.

¹² See the complete list of villages visited during the small survey in Annex 7.

and 14 steps for oedema and MUAC measurements were evaluated respectively. Only 15 out of the 18 CVs agreed to demonstrate both oedema and MUAC; and 12 out of the 15 CVs demonstrating MUAC only and not oedema.

Oedema measurements seemed clearer for the CVS, with 2 accomplishing all 6 steps correctly. The most common mistake, for 69% (n=11) of the CVs, was not holding the thumb pressure on the foot for 3-seconds.

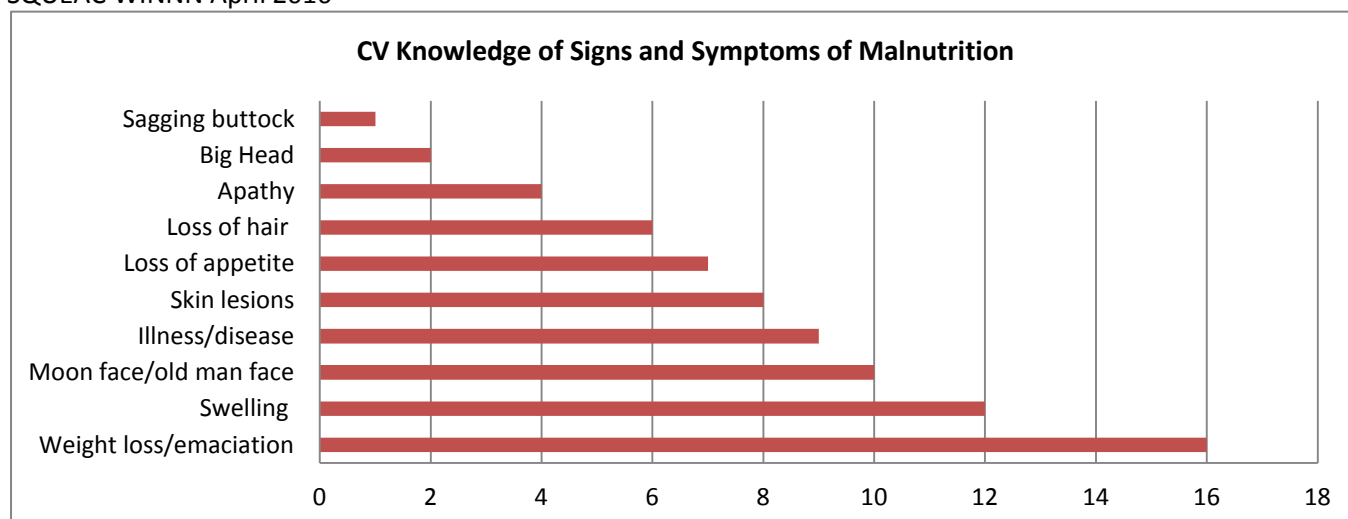
Overall, the CVs only achieved an average of 59% of all 6 steps.

The MUAC measurements, particularly in identifying the mid-point of the mid-upper arm were very poor, with only 2 CVs (13%) correctly identifying the mid-point using either the MUAC tape or the thread method. In evaluating all the CVs, no one correctly completed the MUAC measurement.

Overall, the CVs only achieved an average of 45% of all 14 steps.

CVs were then asked about their comprehension of the signs and symptoms, causes and effects of malnutrition. The results are presented in Graphs 23, 24 and 25.

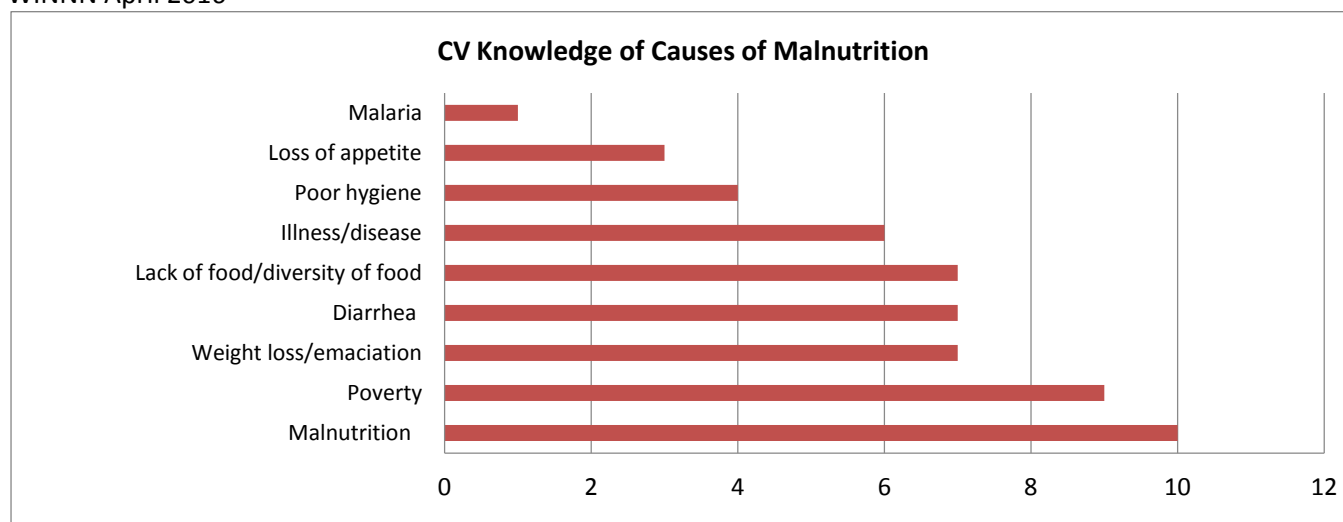
Graph 23: Community volunteer (CV) identification of the signs and symptoms of malnutrition, n=18, Maiyama LGA – SQUEAC WINNN April 2016



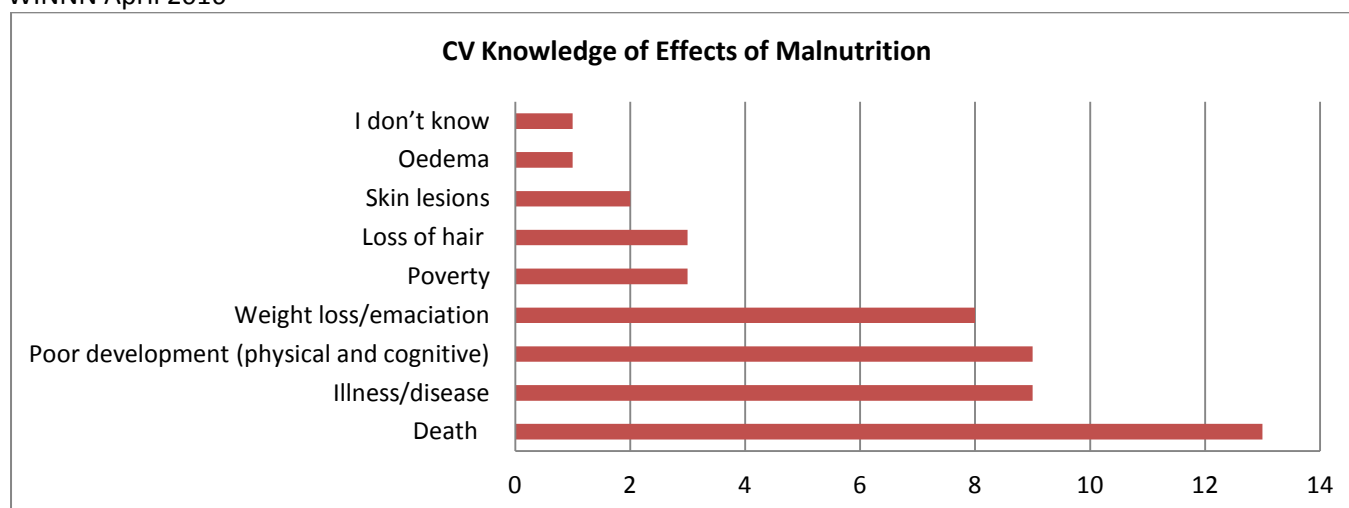
The results indicate that the majority of CVs were able to identify the key indicators of Marasmus and Kwashiorkor, as emaciation or weight loss and swelling, respectively. Just over half of the CVs were able to identify another physical component of marasmus, being moon face or illness (including diarrhoea).



Graph 24: Community volunteer (CV) identification of the causes of malnutrition, n=18, Maiyama LGA – SQUEAC WINNN April 2016



Graph 25: Community volunteer (CV) identification of the effects of malnutrition, n=18, Maiyama LGA – SQUEAC WINNN April 2016



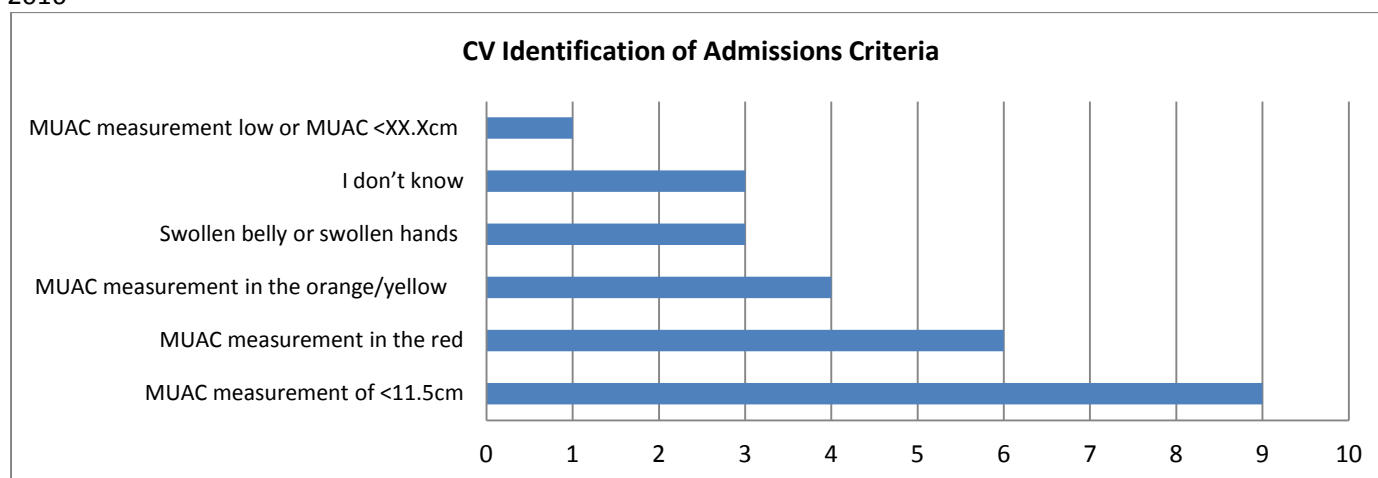
The CVs identified a variety of causes of malnutrition, with the largest frequency being malnutrition and poverty, at 55% (n=10) and 50% (n=9) respectively. It is interesting to note that all but one CV (n=17) were able to identify more than one cause of malnutrition, with most identifying at least 3 causes in discussion with the enumerator. On the other hand, with 55% of CVs providing the answer of 'malnutrition' as a cause of malnutrition, this leads to question the true understanding of CVs of what malnutrition is as an illness. Considering the answer options were provided unprompted (cf. the survey questionnaire in annex 9), the true understanding and therefore awareness raising opportunities to discuss prevention, of the causes, of malnutrition is questionable if the CVs themselves do not understand the causes of malnutrition.

The majority (n=13) of the CVs responded with knowledge that malnutrition is a serious disease and can lead to death. Just over half were also able to identify the effects of illness and poor development could be effects. Others tended to cite the signs and symptoms as the effects, which could indicate they may not have understood the question or were unable to truly identify effects.

When further asked about their understanding of admissions criteria, necessary for correct referrals, only 66% (n=12) were able to correctly identify that the MUAC tape measurement needed to be red or <11.5cm; and no CVs included bilateral oedema as an admission criteria. A total of 3 CVs, indicated they did not know the admissions criteria, as presented in Graph 26 below.



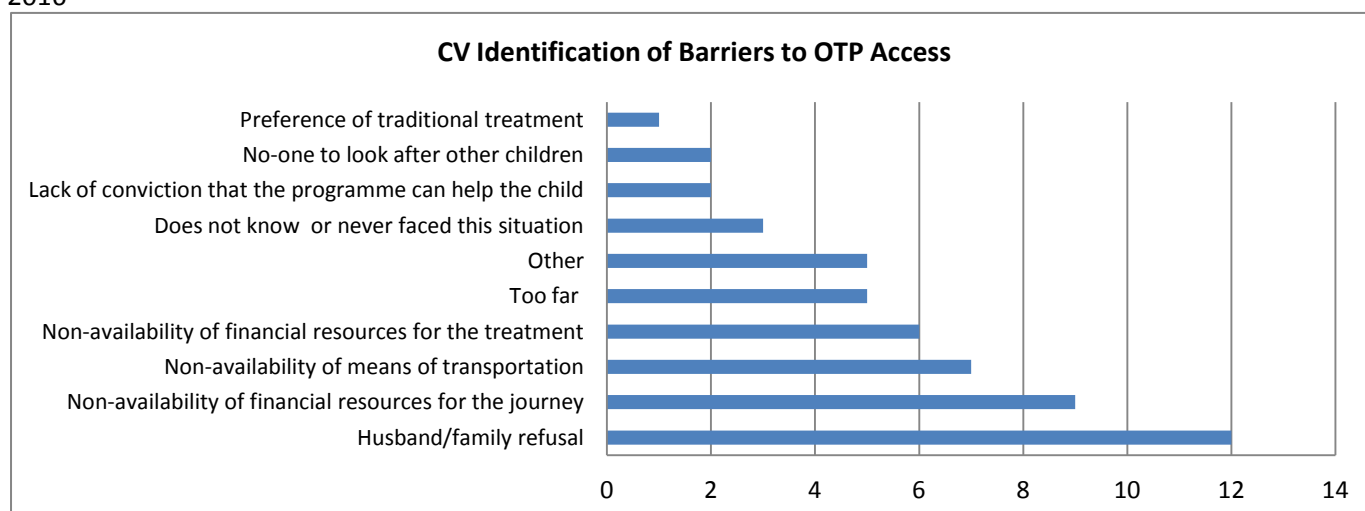
Graph 26: Community volunteer (CV) identification admissions criteria, n=18, Maiyama LGA – SQUEAC WINNN April 2016



Another question was asked in regards to their follow-up of defaulters, with all CVs indicating they had never faced this situation of needing to follow-up with someone who had been admitted and defaulted.

Finally, CVs were asked to identify the barriers as to why individuals may not be able to take their children for treatment for malnutrition at the HF. The results are presented in Graph 27.

Graph 27: Community volunteer (CV) identification of barriers to access, n=18, Maiyama LGA – SQUEAC WINNN April 2016



There were 3 CVs who were unable to answer this question as they indicated they had never faced this situation. Of the 15 who answered, husband refusal was the primary reason cited by 80% (n=12) of the CVs for being unable to attend the HF for OTP treatment. Secondary to this reason was opportunity costs and distance as the reason for non-attendance, including non-availability of finances or means of transportation. Five CVs cited there were other reasons for non-attendance, which included that people believed it was a religious or spiritual disease or they simply refused to listen to advice.

4.3.3. SMALL CASE STUDY RESULTS

In the interest of further understanding cases of defaulters, their knowledge of malnutrition and their reason for defaulting, a small study was conducted around Mungadi PHC (with OTP-site) to identify and interview defaulter cases. One team of enumerators was trained on the survey questions¹³, and sent to review old OTP cards and identify 8-10 defaulters; then proceed to visiting them in their village and conduct the study. A total of 9 defaulters were found, and the following information was gleaned from the interviews, with questions asked on why they decided not to return to the program and their understanding of malnutrition.

In regards to why the caretaker decided not to return included: they saw the child was better (n=4), the OTP site was too far (n=3), a family member was ill (n=1), or opportunity costs were too high (n=4). Of the 9 children that defaulted, two were indicated to have died since they defaulted, although that was not the reason for not returning.

In terms of the understanding of malnutrition and the messages they were able to obtain and understand prior to defaulting; questions were asked to identify the signs and symptoms, the causes and effects of malnutrition. In descending order of frequency, the 9 caretakers understood the signs and symptoms to be: weight loss or emaciation (n=8), illness (n=5), and other clinical signs of malnutrition (n=4).

The causes of malnutrition identified include diarrhoea (n=5), weight loss or emaciation (n=3), malaria (n=2), sprits/witchcraft (n=2), and poverty (n=1).

The effects of malnutrition identified include poor development (n=6), poverty (n=3), illness (n=3) and death (n=2).

4.3.4. STAGE 2 CONCLUSIONS

The analysis of the small survey on CV quality revealed that CVs are not capable of correctly completing anthropometric measurements of oedema and MUAC – which can and likely does have a negative effect on referrals and the sense of rejection based on measurements and admissions at the OTP site. In addition, there seems to be a general lack of follow-up and monitoring of CV activities by the program, LGA and state level personnel; as the majority of ‘trainings’ and ‘supervisions’ occurred only for the CVs who participate at the HF on OTP days. Very few, if any supervisions or monitoring activities occur for CVs outside of the HF direct contact area, as few CHWs venture out to visit the villages concerned.

In addition, activities were stated to occur on a weekly basis, which seems like this may be overburdening the CVs unnecessarily. However, some of the weekly activities could include the CVs who indicated they participate weekly at the OTP site and not necessarily at the village level. Either way, active case finding activities need to occur on a monthly basis at the village level – which was not confirmed in the survey.

Based on qualitative interviews and the survey data, it is evident that CV activities require attention and quality improvements with regards to awareness raising sessions in the community. Many CVs, both male and female, would be limited in discussing this important and sometimes sensitive topic with the opposite gender, which may limit access to both caretakers (typically women) and men (decision makers).

Overall, it is evident that improvements to CV quality management and community mobilisation activities require improvements and better monitoring mechanisms.

In regards to the defaulter case study, it was evident that many defaulters are leaving because they felt their child was improving, and yet two of those cases died; indicating that the gravity of malnutrition and the necessity of completing treatment is not yet fully understood. Combined with the fact that there is poor defaulter follow-up from CHWs and CVs, the gravity of defaulter cases is not yet regulated.

¹³ See the small case study data collection tool in Annex 8.



5. DISCUSSION AND RECOMMENDATIONS

5.1. DISCUSSION

Based on SQUEAC results, it is clear that the key factors affecting coverage in Maiyama LGA include **poor community mobilisation activities and coverage** for CMAM, **limited sensitisation** for influential people, **lack of geographic coverage** of OTP sites, **limited monitoring and supervisory activities**, **poor understanding of malnutrition** and **lack of quality management** at HF and community levels. Overall, there seems to be a good perception and acceptance of the CMAM program, with no stock-outs and improvements made in managing defaulters; however, without improvements to overall quality of the program, coverage is at risk of remaining poor.

Overall, it is evident that improvements to CMAM quality management and community mobilisation activities require improvements and better monitoring mechanisms from state and LGA stakeholders.

5.2. RECOMMENDATIONS

A discussion workshop was held with key stakeholders available at the time on the recommendations necessary for the key issues identified during the SQUEAC investigation. Due to time constraints, a full action plan was not prepared; instead, during the workshop the team proposed the following as a way forward to improve program access and coverage in the LGA, which require further discussion and agreement for implementation.

The table of global recommendations was presented to stakeholders to initiate and guide discussions on the development of key recommendations and preliminary action points.

Community Mobilisation	CMAM Program Quality	Communication/Advocacy
Ensure the inclusion of clear sensitisation strategy (materials and target audience)	Identify needs for capacity building (resources and trainings, etc.)	Identify opportunities for advocacy at LGA, state and national level for improved performance
Ensure means of monitoring CV activities and quality performance at community level	Ensure monitoring roles are identified (who is responsible and at what frequency)	Consider advocacy needs for financing and delivery of CMAM services
Ensure means and improved capacity of active screening and referrals	Ensure of capitalisation on opportunities for sensitisation and systematic screening	Ensure coverage of CMAM activities includes clear monitoring and communication activities between community, HF, LGA, and State actors
Identify methods to improve coverage of community activities	Identify methods to improve coverage of OTP and prevention activities	Ensure peak hunger gap and defaulter periods are covered through expanded strategies and solutions

Based on the global recommendations presented, stakeholders the held round-table discussions on each of the three topics to identify priorities for action. Finally, each person was provided an opportunity to identify their top three priorities for each topic, thus providing a weighing mechanism and further concretising priorities. The results of these discussions and weighing exercises are presented in Table 15.



Table 15: Stakeholder round table discussion results to identify priority action points, Maiyama LGA – SQUEAC WINNN April 2016

Advocacy and Communication	Weight
Using community/traditional leaders to advocate to the LGA council for more financial support for CMAM program	12
Traditional Leaders to advocate to the state actors for creation of more OTP sites	0
Implementing partners in the state to jointly conduct supportive supervision to OTP site and SC	3
SMoH to stage public jingles in sensitizing the communities on CMAM program	1
Create an adhoc (mobile/non-fixed) facility for beneficiaries that are far away from implementation facilities and river-run areas (eg. Mungadi (SNO, NFO))	8
Reporting of activities such as performance indicators, LoS, etc., from LGA to state, then national levels – quality program reporting	0
Taking advantage of feedback meetings as a tool to advocate to various stakeholders for program support on the implementation of nutrition related interventions at all levels	4

CMAM Program Quality	Weight
Refresher training course for CVs and HF staff using the CMAM manual by WINNN/LGA team to ensure that national guidelines on CMAM program are duly followed	8
OTJ training for HF staff and CVs during supportive supervision on CMAM days by LTA, LGA and state team	4
Traditional institution should interface with the LGA team and LTA to ensure that OTP site operates according to the SOPs	2
CVs should be motivated by the state/LGA with stipends to improve quality service delivery	10
Application of monitoring tools for conducting supportive supervisions (LGA teams, state team and national) to be conducted twice monthly	2
Sensitisation/community dialogue on prevention strategies/activities at community level (NFP, LTA)	1

Community Mobilisation	Weight
Development of referral cards for CVs to ensure active case finding and tracking of defaulters	3
In-charge of facility to take leave in monitoring the activities of CVs and ensuring feedback	3
HF staff go to different communities on weekly basis to monitor and assess the performance of the CVs on CMAM activities	3
In-charges of HF understand admission criteria before referring care givers to OTP sites	4
Implementing partners/LGA team should jointly monitor the CVs activities in their respective communities	6
Implementing partners and LGA council should ensure the necessary tools and supplies are always available at the OTP sites to provide to CVs and provide on-the-job training	8



ANNEX 1 – SLEAC WORKPLAN

	23-Feb	24-Feb	25-Feb	26-Feb	27-Feb	28-Feb	29-Feb	01-Mar	02-Mar	03-Mar	04-Mar	05-Mar
	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat
Activity	1	2	3	4	5	6	7	8	9	10	11	12
Travel to Kebbi												
Central meeting with core team/enumerators for SLEAC methodology overview/overview of Kebbi CMAM program / coverage classification shresholds/Sampling												
Training on Field procedures, questionnaires, MUAC measurements and logistics												
SLEAC wide area survey												
Central meeting with core team for Data analysis/ coverage classification												
Sharing preliminary findings with key stakeholders and choosing one LGA for SQUEAC												

ANNEX 2–PARTICIPANTS; SLEAC

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18.	MARYAM YUSUF	MCH KAMBA	NFP DANDI	07033064695
19.	SAMBO YAKUBU	SCI KEBBI	LTA MAIYAMA	08033577131
20.	DINATU MARKUS	PHC MAIYAMA	CHEW	08030423896
21.	MANSIOR ABUBAKAR	PHC MAIYAMA	HEALTH TECHNICIAN	0803379032

ANNEX 3 – WIDE AREA SURVEY QUESTIONNAIRE

SQUEAC

COVERAGE MONITORING NETWORK



QUESTIONNAIRE FOR CARERS OF CHILDREN NOT ENROLLED IN CMAM PROGRAMME

Health district: _____ Health facility: _____
Village: _____ Ethnic group: _____
Team: _____ Date: _____ 2015

1. Do you think your child is ill?

☐ Yes ☐ No → Q4

1a. What symptoms is your child suffering from?

- | | | |
|--|--|---|
| ☐ a. Vomiting | ☐ b. Fever | ☐ c. Diarrhoea |
| ☐ d. Weight loss | ☐ e. Loss of appetite | ☐ f. Apathy |
| ☐ g. Swelling | ☐ h. Loss of hair | ☐ i. Skin lesion |
| ☐ j. Other, please specify: _____ | | |

1b. What illness has caused these symptoms?

- | | | |
|--|--|--|
| ☐ a. I don't know | ☐ b. Malnutrition | ☐ c. Spiritual disease/witchcraft |
| ☐ d. Weight loss | ☐ e. Malaria | ☐ f. Diarrhoea |
| ☐ g. Other, please specify (in local language): _____ | | |

1c. How have you tried to treat this illness or how are you going to treat it?

- | | | |
|---|---|--|
| ☐ a. Medicinal herbs/roots | ☐ b. Enriched meals | ☐ c. Fast |
| ☐ d. Medicinal products (bought at the market) | ☐ e. Medicinal products (bought at the pharmacy) | ☐ f. Prayer |
| ☐ g. Consultation of a traditional healer | ☐ h. Consultation at the health centre | ☐ i. No treatment |
| ☐ j. Other, please specify: _____ | | |

1d. Who made a decision about the choice of treatment?

2. Do you know that there is a service at the health facility dedicated to the treatment of malnutrition? What do you know about this service?

☐ Yes, _____ ☐ No → STOP

3. Why didn't you bring your child to the health facility for the treatment?

- | | |
|--|---|
| ☐ a. Too far; distance in km _____
how many hours on foot? _____ | ☐ b. Insecurity |
| ☐ c. Inaccessibility (seasonal flooding, etc.) | ☐ d. Non-availability of means of transportation |
| ☐ e. Non-availability of the company for the journey | ☐ f. Non-availability of financial resources for the journey |
| ☐ g. Husband/family refusal | ☐ h. Non-availability of financial resources for the treatment |
| ☐ i. Carer ill | ☐ j. Family member ill |
| ☐ k. Too busy; reason: _____ | ☐ l. No-one to look after other children |
| ☐ m. Ashamed to enrol in the programme | ☐ n. Lack of conviction that the programme can help the child |
| ☐ o. Fear of hospital stay (away from HH, fees) | ☐ p. Preference of traditional treatment |
| ☐ q. Previous rejection of a child; when? _____ | ☐ r. Rejection of a known child |
| ☐ s. Quantity of PlumpyNut® is too little to justify the journey | |



4. Has your child been already enrolled in cmam programme?

☐ Yes ☐ no  stop

4a. Why isn't your child still in the programme?

- ☐ a. Defaulted a1. When? ☐ a2. Why? ☐
☐ b. Discharged as cured b1. When? ☐
☐ c. Discharged but not cured c1. When? ☐ c2. Why? ☐
☐ d. Other reason, please specify: _____

ANNEX 4 – SLEAC SAMPLED VILLAGES

LGA	Village	All SAM Cases	Cases covered	Recovering cases
Dandi	Tungar Marafa	1	0	0
Dandi	Tungar Wali	4	4	0
Dandi	Masarawa	1	0	0
Dandi	Tasobon	4	0	1
Dandi	m/kwai	0	0	4
Dandi	Waduka	0	0	1
Dandi	Runtuwar Fulani	3	3	1
Dandi	Gorun Yamma	1	0	8
Dandi	Shiyar Ubandoma	3	1	6
Dandi	Tazaye	5	4	2
Dandi	Tabkin Sayo	8	7	4
Dandi	Maidaji	3	0	5
Dandi	Balagwanto	2	0	1
Dandi	Rinjiya Maikabi	4	0	8
Dandi	Tungar Haldi	0	0	0
Dandi	T/Nori	2	0	0
Dandi	Kwalekwale	3	0	0
Dandi	Dolekaina	3	1	0
Dandi	Sabon gari	5	2	4
Gwandu	Gora	7	2	6
Gwandu	Bakoshi	1	0	0
Gwandu	Lagwarde	7	3	0
Gwandu	KK Fulani	3	1	9
Gwandu	Tari	6	1	1
Gwandu	Biriji Nepha	0	0	4
Gwandu	Wuru Kereji	1	0	0
Gwandu	Madiya	0	0	0
Gwandu	Garin Joga	1	0	0
Gwandu	Dalijan Yamma	2	2	3
Gwandu	Jibade	0	0	0
Gwandu	Gwabare Sakki	6	2	8
Gwandu	Dalhelawa	0	0	0
Gwandu	Yara	1	1	0
Gwandu	Gidan Kibiya	0	0	0
Gwandu	Rinaye	3	1	4



Gwandu	Wuro Yondu	0	0	0
Gwandu	Bagari	0	0	0
Maiyama	Danwa	11	1	0
Maiyama	Arausaya	1	0	2
Maiyama	Liba	9	0	2
Maiyama	Kuberi	18	0	1
Maiyama	Rugga	1	0	0
Maiyama	Masaka	14	5	7
Maiyama	Kulya	2	0	6
Maiyama	Gamjeji	2	1	2
Maiyama	Rafin Nagindi	10	1	0

ANNEX 5 – SQUEAC WORKPLAN

SQUEAC/EBBI - MAIYAMA LGA	Activity	Date																				
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
	Preparations																					
	Travel																					
	Preparations + briefings																					
	Travel to Kadi																					
	Training on SQUEAC																					
	Quantitative data collection and analysis for SQUEAC																					
	Qualitative data collection training																					
	Qualitative data collection and analysis																					
	Hypothesis formulation and finalisation of data analysis																					
	Stage 2 hypothesis testing																					
	Recommendations and Action plan																					
	Travel to Abuja + debriefings																					
	Travel																					
	Report writing																					



ANNEX 6 – LIST OF ENUMERATORS; SQUEAC

	Name	SQUEAC Role
1	Ayuba Umar	Enumerator
2	Hafsi Muhammed Illo	Enumerator
3	Karima Bello	Enumerator
4	Eunice Erey Dabai	Enumerator
5	Matthew Bitrus	Enumerator
6	Mary Luka	Enumerator
7	Fati Zagi	Enumerator
8	Panishe Bahago	Enumerator
9	John Bagadu Abu	Enumerator
10	Abdulrahman Zubairu	Enumerator
11	Faith James	Enumerator
12	Yunusa Abubakar	Enumerator
13	Halima Danjuma	Enumerator
14	Aishatu Sahabi Liman	Enumerator
15	Mansur Abubakar	Enumerator

ANNEX 7 – LIST OF VILLAGES SMALL SURVEY

	WARD	VILLAGE NAME
1	Liba	Dadin Kowa Yamma
2		Tsatsumbai
3	Maiyama	Maiyama
4	Gidiga	Kubberi Shiyar Liman
5	Mungadi	Gyasuwa Yamma
6	Giwatazo	Giwatazo Shiyar Liman Gabbas
7	Mayalo	Mayalo Shiyar Liman
8		Ungwar Abu Yamma
9	Kawara	Kamba Fada
10		Sabon Sara Gabbas
11		Ruwan Fili Tullu
12	Karaye	Masaka Kudu
13	Andarai	Duhuwa Makwalla
14		Kurunkudu Fada Yamma
15		Arausanya Gabbas
16	Gumbi Kure	Massalanchi
17		Gumbi Kure Fada Gabbas
18		Marna



ANNEX 8– INTERVIEW MATRIX

LGA	TEAM	MALE/ FATHER	FEMALE/ MOTHER	CARER OF CMAM CHILD	TEACHER	RELIGIOUS LEADER	COMMUNITY LEADER	LOCAL NGO	CV CMAM	CV IYCF	HF STAFF/ CHW	TRADI- TIONAL HEALER	MOH	WINNN
MAYAMA	CON SUL TANT												2 INT	2 INT
	TEAM 1	1 FGD	1 INT	3 INT	1 INT		1 INT		1 INT		2 INT	1 INT		
	TEAM 2	1 INT			1 INT (Non CMAM area)		1 FGD	1 INT	1 INT	1 FGD (Non CMAM area)	1 INT	1 INT		
	TEAM 3	1 INT (Non CMAM area)	1 FGD 1 INT	1 FGD		1 INT	1 FGD		1 INT	1 INT (Non CMAM area)	1 INT			
	TEAM 4		1 INT	1 INT			1 INT		1 INT	1 INT (Non CMAM area)	1 INT			
	TEAM 5		1 FGD 1 INT (Non CMAM area)		1 INT	1 INT	1 INT							
TOT	44	3	6	5	3	2	5	1	4	4	5	2	2	2



ANNEX 9 – SMALL SURVEY QUESTIONNAIRE

SMALL SURVEY QUESTIONNAIRE FOR CMAM COMMUNITY VOLUNTEERS – MAIYAMA LGA

Health Facility: _____ Closest HF with OTP: _____
 Village: _____ Ethnicity: _____
 Team: _____ Date: _____

1. Are you an active member of the community volunteers for CMAM (nutrition treatment program)?

☐ Yes ☐ No → STOP (find an active CMAM CV to complete the questionnaire)

1a. Can you please describe all the activities you do as a CMAM community volunteer?

(NB : check all answers that apply – multiple answers)

- ☐ a. Going house to house to measure children ☐ b. Giving health/nutrition messages (sensitization) ☐ c. Referring children to HF
☐ d. Follow-up on children referred to HF ☐ e. Follow-up on children who defaulted from HF ☐ f. Filling out reports
☐ g. Participate at the HF during OTP days ☐ h. Participating in monthly meetings
☐ i. Other, specify: _____

1b. What tools do you use? (NB : check all answers that apply – multiple answers)

- ☐ a. I don't have any tools ☐ b. MUAC Tape ☐ c. Pictures or flip-charts
☐ d. Reporting tools ☐ e. Other, specify: _____

1c. ENUMERATOR OBSERVATIONS OF TOOLS (NB : check all situations that apply – multiple answers)

- ☐ a. MUAC Tape is in good condition (not bent or crumpled) ☐ b. You have seen copies of the pictures or flip-charts ☐ c. You have seen the reporting tools and referral slips
☐ d. Other observations, specify: _____

2. Have you been trained by someone on how to be a community volunteer?

☐ Yes ☐ No → Q3

If YES, when did you receive the training? Specify month: _____ and, year: _____

If YES, who provided the training for you? Describe who: _____

2a. What topics were you trained on during this training? (NB : check all answers that apply – multiple answers)

- ☐ a. Going house to house to measure children ☐ b. Giving health/nutrition messages (sensitization) ☐ c. Referring children to the HF
☐ d. Follow-up on children referred to HF ☐ e. Follow-up on children who defaulted ☐ f. Filling out reports
☐ g. Signs and symptoms of malnutrition ☐ h. Health topics (specify: _____) ☐ i. Admissions criteria for the program
☐ j. Working at the HF during OTP days ☐ k. Other, specify: _____

3. How often do you complete your activities as the community volunteer? (check only one answer)

- ☐ a. Weekly ☐ b. Monthly ☐ c. Twice per month
☐ d. Once every 2 or 3 months ☐ e. Other, specify: _____

3a. Is there anyone who supervises you during your work or comes to monitor your activities as a CV?

☐ Yes ☐ No → Q4

If YES, when did you receive a visit/supervision? Specify month: _____ and, year: _____



If YES, who provided the supervision for you? Describe who: _____

4. PRACTICAL VERIFICATION: Can you please demonstrate for me, what steps you take to measure a child for malnutrition?

****You will need a child from the community to practice on → Be sure to choose a child of 4 or 5 years old, as these are easier to watch and the child is less fearful****

****Enumerators, make close observations on each step of measuring Oedema and MUAC and check each part that they did correctly or incorrectly → DO NOT make any corrections for them or tell them what to do during the demonstration. (*If they miss a step, or do not show you how to measure oedema and/or MUAC, then write it in the comments section, but DO NOT tell them)****

☐ Yes (they agreed to show you)

☐ No (they did not agree to show you, or cannot) → Q5

4a. OEDEMA DEMONSTRATION (to be completed only if/when they show you)

☐ Child is facing the CV	☐ Correct/yes	☐ Incorrect/no
☐ Child is seated with the mother, on the ground/chair	☐ Correct/yes	☐ Incorrect/no
☐ CV takes both feet into hands	☐ Correct/yes	☐ Incorrect/no
☐ CV uses thumbs to press into the top of the child's feet	☐ Correct/yes	☐ Incorrect/no
☐ CV presses for 3 full seconds (counting slowly)	☐ Correct/yes	☐ Incorrect/no
☐ CV releases thumbs and looks to see if there is oedema	☐ Correct/yes	☐ Incorrect/no

Comments/Observations:

4b. MUAC DEMONSTRATION (to be completed only if/when they show you)

☐ Child is seated with the mother, or standing	☐ Correct/yes	☐ Incorrect/no
☐ CV takes the measurement on the left arm	☐ Correct/yes	☐ Incorrect/no
☐ CV removes all clothing from the left arm	☐ Correct/yes	☐ Incorrect/no
☐ CV locates the top of the shoulder bone	☐ Correct/yes	☐ Incorrect/no
☐ CV locates the elbow bone	☐ Correct/yes	☐ Incorrect/no
☐ CV places the MUAC tape WINDOW on the shoulder of the child	☐ Correct/yes	☐ Incorrect/no
☐ CV finds the distance between the shoulder bone and elbow, using the MUAC tape	☐ Correct/yes	☐ Incorrect/no
☐ CV divides the distance in two (in half) and correctly places finger at the mid-point	☐ Correct/yes	☐ Incorrect/no
☐ CV marks the mid-point with a pen	☐ Correct/yes	☐ Incorrect/no
☐ CV places the MUAC tape horizontally at the pen mark or the mid-point	☐ Correct/yes	☐ Incorrect/no
☐ CV gently wraps the MUAC tape around the arm, through the slot	☐ Correct/yes	☐ Incorrect/no
☐ CV ensure that the tape is not too loose and not too tight (should be gently touching the skin the whole way around)	☐ Correct/yes	☐ Incorrect/no
☐ CV reads the MUAC measurement at the window space of the MUAC tape	☐ Correct/yes	☐ Incorrect/no
☐ CV correctly reads the MUAC measurement in CM (MUAC (cm): _____)	☐ Correct/yes	☐ Incorrect/no

Comments/Observations:



5. What are the SIGNS and SYMPTOMS of malnutrition? (NB : check all answers that apply – multiple answers)

- | | | |
|--|--|---|
| ☐ a. Weight loss/emaciation | ☐ b. Swelling | ☐ c. Illness/disease |
| ☐ d. Loss of appetite | ☐ e. Apathy | ☐ f. Loss of hair |
| ☐ g. Skin lesions | ☐ h. Moon face/old man face | ☐ i. Sagging buttock |
| ☐ j. Other, specify: _____ | ☐ k. I don't know | |

5a. What are the CAUSES of malnutrition? (NB : check all answers that apply – multiple answers)

- | | | |
|--|--|--|
| ☐ a. Weight loss/emaciation | ☐ b. Malnutrition | ☐ c. Illness/disease |
| ☐ d. Loss of appetite | ☐ e. Malaria | ☐ f. Diarrhea |
| ☐ g. Spiritual/witchcraft | ☐ h. Poverty | ☐ i. Lack of food/diversity of food |
| ☐ j. Other, specify: _____ | ☐ k. I don't know | |

5b. What are the EFFECTS of malnutrition? (NB : check all answers that apply – multiple answers)

- | | | |
|---|---|---|
| ☐ a. Weight loss/emaciation | ☐ b. Death | ☐ c. Illness/disease |
| ☐ d. Poor development (physical and cognitive) | ☐ e. Poverty | ☐ f. Loss of hair |
| ☐ g. Skin lesions | ☐ h. Other, specify: _____ | ☐ i. I don't know |

6. What are the criteria for admission to the CMAM program at the HF? (NB: check all answers that apply—multiple answers)

- | | | |
|--|---|--|
| ☐ a. MUAC measurement in the red | ☐ b. MUAC measurement in the orange/yellow | ☐ c. MUAC measurement of <11.5cm |
| ☐ d. MUAC of >=11.5cm or <12.5cm | ☐ e. MUAC measurement low or MUAC <XX.Xcm | ☐ f. Swollen belly or swollen hands |
| ☐ g. Bilateral Oedema (in the feet) | ☐ h. Other, specify: _____ | ☐ i. I don't know |

7. Have there ever been children in your community that you referred to the HF/OTP who were rejected, or not admitted, to the program?

- ☐ Yes ☐ No → Q8

If YES, why were they rejected? Specify: _____

If YES, what did you do for this child who was rejected? Specify: _____

7a. Have there ever been children in your community that you referred to the HF/OTP who defaulted, or left, the program?

- ☐ Yes ☐ No → Q8

If YES, why did they default/leave? Specify: _____

Did you follow-up with the defaulted child? Specify: _____

What did you say to the defaulted child's caregiver to encourage them to go back to the program? Specify: _____

8. In your opinion, why do you think people are deciding not to take their child to the HF for nutrition treatment?

(NB : check all answers that apply – multiple answers)

- | | |
|---|---|
| ☐ a. Too far | ☐ b. Insecurity |
| ☐ c. Inaccessibility (seasonal flooding, etc.) | ☐ d. Non-availability of means of transportation |
| ☐ e. Non-availability of the company for the journey | ☐ f. Non-availability of financial resources for the journey |
| ☐ g. Husband/family refusal | ☐ h. Non-availability of financial resources for the treatment |
| ☐ i. Carer ill | ☐ j. Family member ill |
| ☐ k. Too busy; reason: _____ | ☐ l. No-one to look after other children |
| ☐ m. Ashamed to enroll in the programme | ☐ n. Lack of conviction that the programme can help the child |
| ☐ o. Fear of hospital stay (away from HH, fees) | ☐ p. Preference of traditional treatment |
| ☐ q. Previous rejection of a child; when? _____ | ☐ r. Rejection of a known child |
| ☐ s. Quantity of PlumpyNut® is too little to justify the journey | ☐ t. Does not know or never faced this situation |
| ☐ u. Other, specify: _____ | |



ANNEX 10 – CASE STUDY DATA COLLECTION TOOL

CASE STUDY GUIDE - DEFAULTERS – MAIYAMA LGA

QUESTIONNAIRE

1. Did you (and your child) leave the nutrition program at the OTP?

☐ YES ☐ NO → STOP and find the right child

If YES, when did you leave the program? Specify month: _____ and, year: _____

2. Why did you choose to not return to the HF with the child for nutrition treatment?

(NB : check all answers that apply – multiple answers)

- | | |
|---|---|
| ☐ a. Too far | ☐ b. Insecurity |
| ☐ c. Inaccessibility (seasonal flooding, etc.) | ☐ d. Non-availability of means of transportation |
| ☐ e. Non-availability of the company for the journey | ☐ f. Non-availability of financial resources for the journey |
| ☐ g. Husband/family refusal | ☐ h. Non-availability of financial resources for the treatment |
| ☐ i. Carer ill | ☐ j. Family member ill |
| ☐ k. Too busy; reason: _____ | ☐ l. No-one to look after other children |
| ☐ m. Ashamed to enroll in the programme | ☐ n. Lack of conviction that the programme can help the child |
| ☐ o. Fear of hospital stay (away from HH, fees) | ☐ p. Preference of traditional treatment |
| ☐ q. Previous rejection of a child; when? _____ | ☐ r. Rejection of a known child |
| ☐ s. Quantity of PlumpyNut® is too little to justify the journey | ☐ t. Does not know or never faced this situation |
| ☐ u. Saw that the child was better/healthy | ☐ v. Other, specify: _____ |

3. Can you describe, what are the SIGNS and SYMPTOMS of malnutrition? (NB : check all answers that apply – multiple answers)

- | | | |
|--|--|---|
| ☐ a. Weight loss/emaciation | ☐ b. Swelling | ☐ c. Illness/disease |
| ☐ d. Loss of appetite | ☐ e. Apathy | ☐ f. Loss of hair |
| ☐ g. Skin lesions | ☐ h. Moon face/old man face | ☐ i. Sagging buttock |
| ☐ j. Other, specify: _____ | ☐ k. I don't know | |

3a. Can you describe, what are the CAUSES of malnutrition? (NB : check all answers that apply – multiple answers)

- | | | |
|--|--|--|
| ☐ a. Weight loss/emaciation | ☐ b. Malnutrition | ☐ c. Illness/disease |
| ☐ d. Loss of appetite | ☐ e. Malaria | ☐ f. Diarrhea |
| ☐ g. Spiritual/witchcraft | ☐ h. Poverty | ☐ i. Lack of food/diversity of food |
| ☐ j. Other, specify: _____ | ☐ k. I don't know | |

3b. Can you describe, what are the EFFECTS of malnutrition? (NB : check all answers that apply – multiple answers)

- | | | |
|---|---|---|
| ☐ a. Weight loss/emaciation | ☐ b. Death | ☐ c. Illness/disease |
| ☐ d. Poor development (physical and cognitive) | ☐ e. Poverty | ☐ f. Loss of hair |
| ☐ g. Skin lesions | ☐ h. Other, specify: _____ | ☐ i. I don't know |

THANK THE CARETAKER



ⁱ Lower confidence interval