

SLEAC and SQUEAC CMAM Coverage Assessments of Katsina State, Nigeria

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

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Figure 1: An informal group discussion with men, SQUEAC WINNN 2016



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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
EPI	Expanded Program on Immunization
GAM	Global Acute Malnutrition
IEC	Information, Education and Communication
IYCF	Infant and Young Child Feeding Practices
LGA	Local Government Areas
LQAS	Lot Quality Assurance Sampling
MoH	Ministry of Health
MUAC	Mid-Upper Arm Circumference
OJT	On job Training
OTP	Out-patient Treatment Program
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
WINNN	Working in Nutrition in Northern Nigeria



EXECUTIVE SUMMARY

Katsina is a state in North West zone of Nigeria. The WINNN (Working to Improve Nutrition in Northern Nigeria) project has been implemented in five States; Kebbi, **Katsina**, Jigawa, Zamfara, and Yobe in Northern Nigeria since 2011. CMAM (Community based Management of Acute Malnutrition) is one of the components of WINNN project. In Katsina State, WINNN is implemented in three LGAs (Local Government Area) namely; Bakori, Jibia and Mai'Adua. Since the inception of CMAM in 2013, no program coverage assessment has been conducted. 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. Bakori LGA was classified as having low coverage while Jibia and Mai'Adua LGAs classified as having moderate coverage. Chi Square test indicated that coverage was not patchy across the LGAs with overall coverage at 39% (95% CI: 33% - 45%). This is below the SPHERE standards of 50% for rural areas. The list of barriers from across the LGAs pointed towards lack of understanding how the program works despite the good program awareness reported.

Bakori LGA was chosen by the stakeholders for in-depth investigation and analysis of factors affecting program coverage and acceptance. Bakori has the poorest coverage. All barriers in Mai'Adua and Jibia are also represented in Bakori. Also some unique barriers were unveiled in Bakori LGA such as harassment by staff at the facility during OTP day and stigma.

The main boosters to the program coverage unveiled by the SQUEAC investigation included constant supply of RUTF, good perception about the program and high program awareness. However, the program is characterized by a long list of strong barriers to access and uptake of the services. Weak community mobilization component of the CMAM program was evident with less community activities and inadequate monitoring and supervision of the community mobilization strategy.

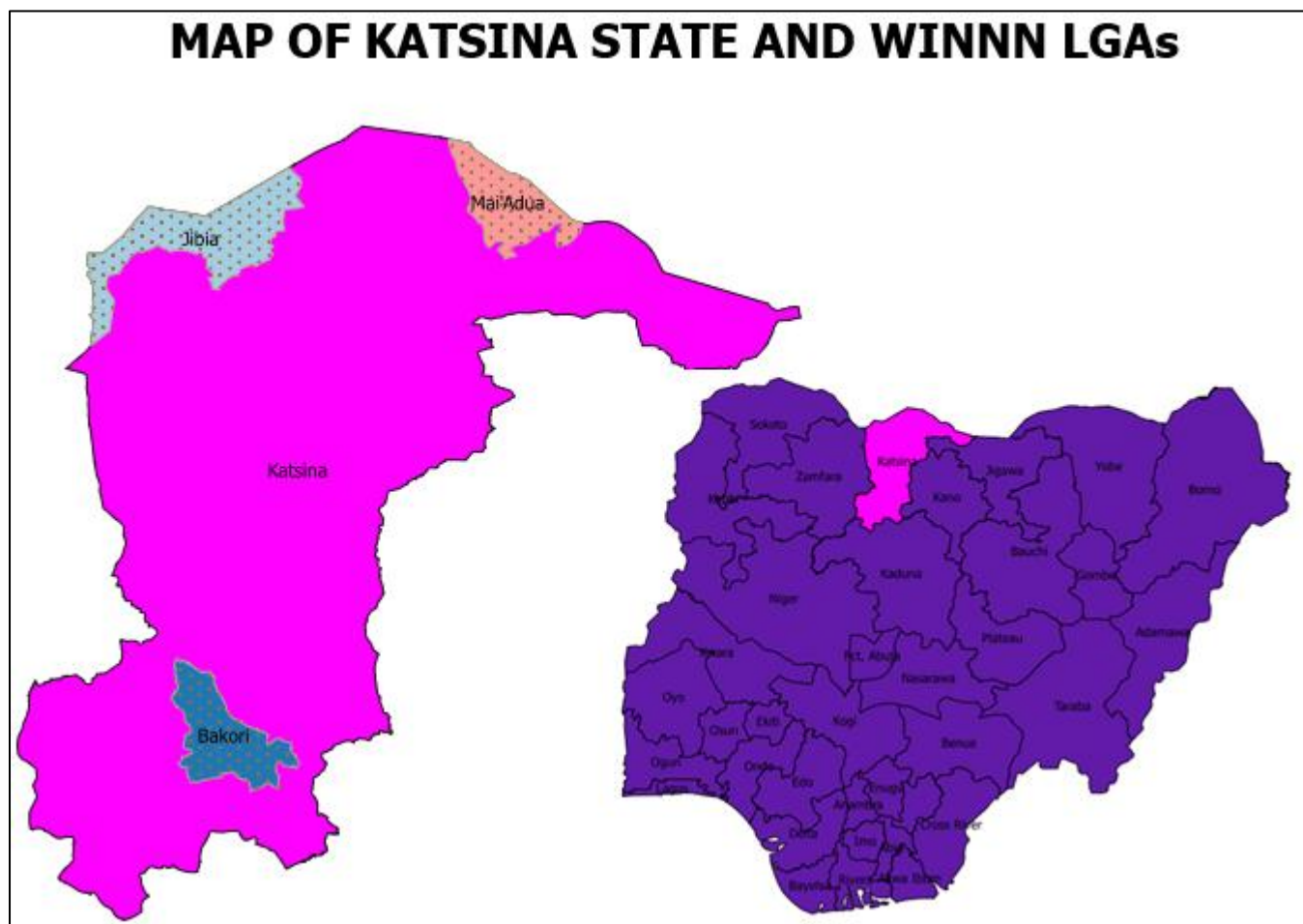
Proper coordination by the stakeholders both at national and State/LGA and mainstreaming of CMAM into the existing health care services would prove invaluable in ensuring quality of care as well as sustainability of CMAM activities by the Government. Monitoring and supervision of community outreach activities, exploring ways of motivating the CVs through stipends and ensuring spatial distribution of CV network across the coverage area would go a long way in improving program coverage in Katsina State. Use of effective communication channels, social groups and committees existing in the community would be essential in disseminating key messages about CMAM program. The significant (76%) proportion of beneficiaries coming from out of coverage area is an indication that it would be essential to acknowledge that malnutrition is a challenge which calls for more effort in advocacy for technical collaboration and investment in prevention and treatment of malnutrition in northern Nigeria.

1. INTRODUCTION and CONTEXT

1.1. CONTEXT and MAP

Katsina is a state in North West zone of Nigeria. Katsina was created from Kaduna State in 1987. Katsina is bordered by the Republic of Niger to the north and by the Nigerian states of Jigawa and Kano to the east, Kaduna to the south, and Zamfara to the west. Katsina State consists of thirty-four (34) LGAs. The state is predominantly Muslim with Hausa-Fulani being the largest ethnic group¹. Generally, it's characterised by scrub vegetation and covers an area of 24,192 square km. The State has an estimated population of over 9 million persons, at an annual growth rate of 3.2% according to population census 2006.

Diagram 1: Map of Katsina state and identification of WINNN LGAs – SQUEAC WINNN March 2016



1.2. REGIONAL CONTEXT

The community practice farming as their main livelihood with peanuts being the main cash crop with millet and sorghum grown as staple foods. Most of her people own cattle, sheep, or goats. The State experiences two dry spells in a calendar year with long rain season falling between May and September. The assessment was conducted during the hot dry season.

Food security and nutrition status in the area is mainly affected by prolonged dry spells resulting to low crop production. High food prices due to many issues such as Boko Haram-related insecurity, production shortfalls, transport costs, outflow of grain into Niger, are a factor which impact on household food security status with many households struggling to meet their daily nutritional needs.

¹ Source: https://en.wikipedia.org/wiki/Katsina_State



1.3. NUTRITIONAL SITUATION, HEALTH AND NUTRITION SERVICES

In partnership with the Department for International Development, the WINNN consortium (ACF, Save the Children and UNICEF) has been supporting community based management of acute malnutrition services since 2011. The project is implemented in five States; Kebbi, Katsina, Jigawa, Zamfara, and Yobe in Northern Nigeria. Each State has three LGAs offering CMAM services under the WINNN project and each LGA has five facilities with OTP (Outpatient Therapeutic Program) services and one SC (Stabilization Centre) serving the entire LGA.

The WINNN project has four outputs which include; Integration of Micronutrient interventions into Routine primary health services, delivery of effective IYCF (Infant and Young Child Feeding) interventions, delivery of effective treatment of SAM and Strengthening of nutrition coordination and planning mechanism at the State and National levels. The four outputs aims at improving nutrition by providing treatment for SAM using the CMAM model, vitamin A supplementation and deworming, Iron folate supplementation for pregnant women and promotion of improved infant and young child feeding practices.

The WINNN project is implemented in three LGAs in Katsina State namely; Bakori, Mai'Adua and Jibia. The most recent SMART survey conducted in 2015 by UNICEF unveiled GAM (Global Acute Malnutrition) prevalence by weight for height Z scores at **10.3 %** (8.0, 13.1 95% C.I) and the prevalence of SAM was **2.1 %** (1.4, 3.3 95% C.I.) Nutrition status by MUAC cut off also showed similar results at **8.1 %** (5.8, 11.2 95% C.I) and **2.5 %** (1.5, 4.1 95% C.I) for GAM and SAM respectively.

Since the inception of the project, no program coverage assessment has been conducted in the mentioned LGAs. 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 treatment.

SAM of children aged 6-59 months is managed at SC and OTP with the following case definition:

Table 1: Case_definition

Program	Admission criteria
SC	MUAC < 115 mm and/or existing bilateral Oedema with complications
OTP	MUAC < 115 mm and/or existing bilateral Oedema (+&++) without complications

CMAM services are also offered in some other LGAs in Katsina State by UNICEF.

1.4. OBJECTIVES

Principal 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.

Sub-objectives

- To classify coverage in each LGA and estimate coverage for the state
- To perform an in depth investigation in 1 LGA
- To identify factors (boosters and barriers) affecting the uptake of the SAM treatment
- To provide an in depth analysis of programme performance and factors affecting coverage
- To develop specific recommendations to improve acceptance and coverage of the programme
- To enhance competencies of partner staff in coverage survey methodologies.
-

SLEAC and SQUEAC methodologies were employed. SLEAC methodology was used to classify coverage for each LGA and estimate the overall coverage for the state and also list barriers to access and uptake of CMAM services. SQUEAC methodology was used to conduct in-depth investigation and analysis of program performance and factors affecting coverage in one LGA. This approach exemplifies the complementarity of **SLEAC** and **SQUEAC** and the usefulness of **SLEAC** as a screening or targeting tool / method for in-depth **SQUEAC** investigations. This report therefore presents results in two sections; SLEAC and SQUEAC.



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 SDU². SLEAC can also estimate coverage over several service delivery units hence ideal for assessing the overall coverage for Katsina 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. The SLEAC survey was undertaken between 8th and 16th 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 2. Systematic random sampling was then employed to select the required number of villages. Important to note is that all villages were included in the sampling frame.

Table 2: Sample sizes and number of villages sampled

LGA	Estimated total population	Average village population	% under 5	SAM prevalence*	Target sample size (n)	n_{villages}
Bakori	195389	298	18	2.0	40	38
Jibia	327394	1095	18	2.0	40	10
Mai'Adua	271201	1184	18	2.0	40	10

* It is better to use a lower SAM prevalence estimate. Therefore the prevalence was recalculated as
Prevalence = $2.5 - (2.5 - 1.5)/2 = 2.0\%$ 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 Katsina SLEAC, active and adaptive case finding for SAM cases was appropriate whereby screening of children 6-59 months using paediatric MUAC (Mid Upper Arm Circumference) tape and examination of bilateral pitting oedema was done. During the assessment all severely malnourished children identified who were not in CMAM program were referred to the nearest health facility.

Survey team training and composition: Training on SLEAC methodology and field procedures was undertaken for two days. The survey team consisted of a total of 6 teams; two per LGA. A team comprised of two enumerators and one member of the core team to guide the enumerators in the process. Once the team arrived at the sampled villages, the 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 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>

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:

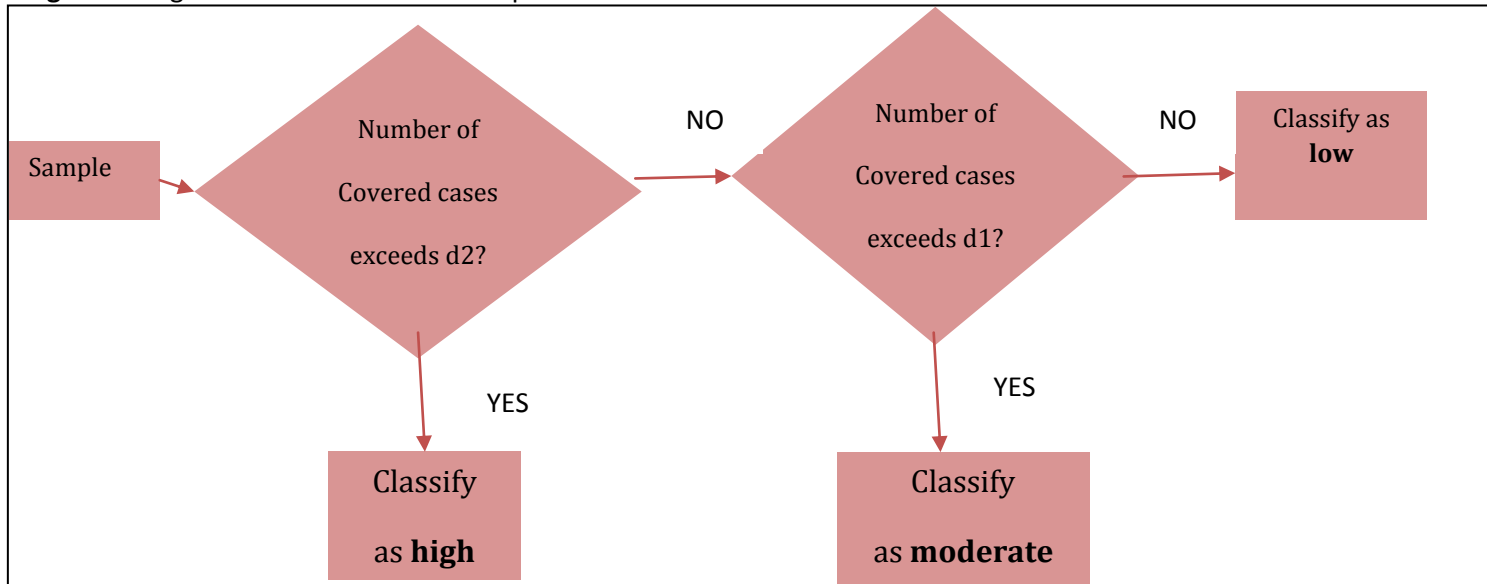
- Low coverage: 20% or less
- Moderate: greater than 20% up to 50%
- High coverage: above 50%

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 SCI March 2016



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

Table 3 summarises the data for the wide area survey and Table 4 show coverage classification for each LGA.



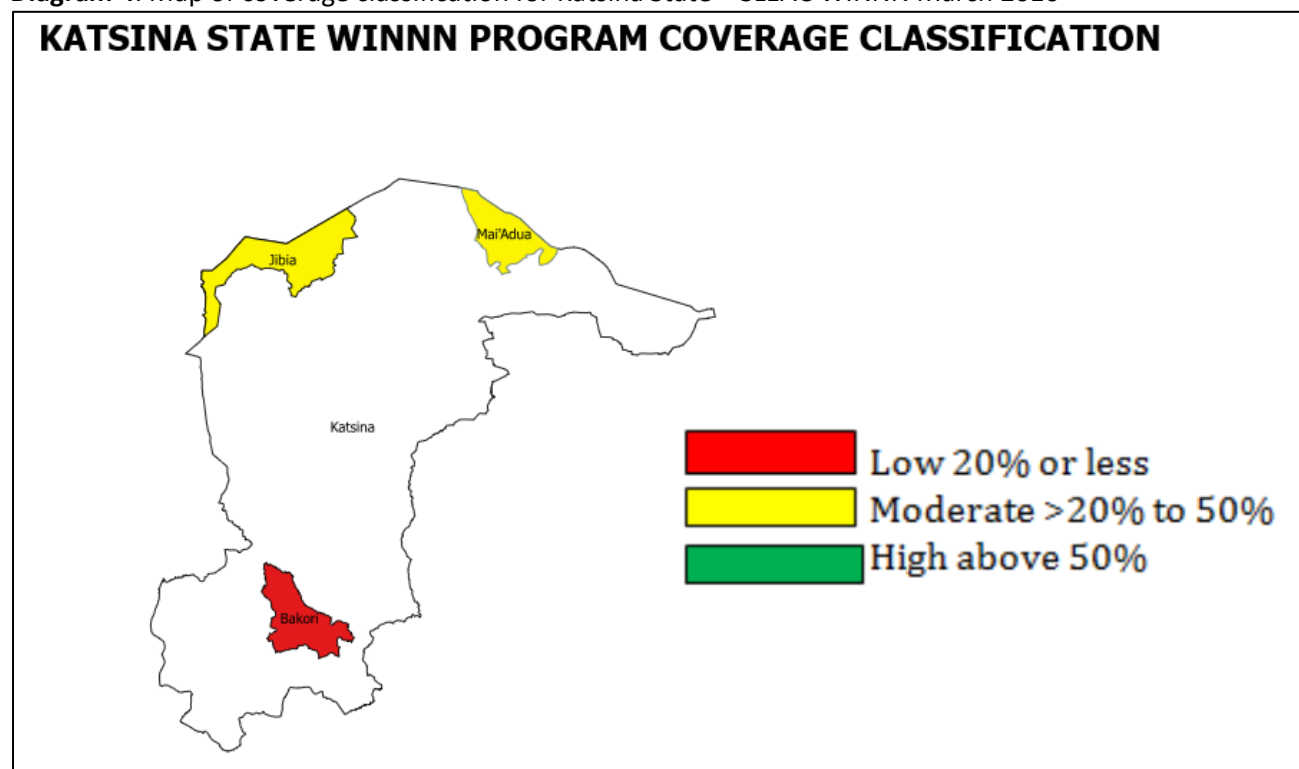
Table 3: Katsina survey data per LGA_ SLEAC WINNN March 2016

LGA	SAM cases NOT in program	SAM cases in OTP	In OTP recovering	Recovering out
Bakori	33	7	2	3
Jibia	35	15	26	19
Mai'Adua	27	15	15	8
State Total	95	37	43	30

Table 4: 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
Bakori	45	9	9	No	22	No	Low
Jibia	95	41	19	Yes	47	No	Moderate
Mai'Adua	65	30	13	Yes	32	No	Moderate

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



2.5 OVERALL COVERAGE ESTIMATES

County-level coverage estimates were calculated using a posterior weighting approach using the number of cases estimated in each surveyed service delivery unit divided by the total number of cases across all service delivery units based on the method described in Myatt et al, 2012; shown in table 5.

Table 5: Weighting analysis -SLEAC WINNN March 2016

LGA	Population	% of under 5	SAM Prevalence	N	W=N/ΣN
Bakori	195389	18	2.0%	703	703/2858= 0.25
Jibia	327394	18	2.0%	1179	1179/2858= 0.41
Mai'Adua	271201	18	2.0%	976	976/2858= 0.34
Total	793984	18%	2%	2858	1.00

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



Table 6: Single coverage estimate- 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
Bakori	195389	18	2.0%	703	0.25	45	9	0.20	0.05
Jibia	327394	18	2.0%	1179	0.41	95	41	0.43	0.18
Mai'Adua	271201	18	2.0%	976	0.34	65	30	0.46	0.16
Total	-			2858	1.00				0.39

The overall single coverage estimate (Tables 6) was at 39% (95% CI: 33% - 45%). This is below the SPHERE standards of 50%.

Chi-square test was performed to check whether coverage across sub-counties was patchy.

Table 7: Chi- square test analysis_ SLEAC WINNN March 2016

LGA	Sample size	O *	E **	(O - E)2 **	$\frac{(O - E)^2}{E}$
Bakori	45	9	$45 \times \frac{80}{205} = 17.56$	$(9 - 17.56)^2 = 73.27$	$\frac{73.27}{17.56} = 4.17$
Jibia	95	41	$95 \times \frac{80}{205} = 37.07$	$(41 - 37.07)^2 = 15.44$	$\frac{15.44}{37.07} = 0.42$
Mai'Adua	65	30	$65 \times \frac{80}{205} = 25.37$	$(30 - 25.37)^2 = 21.44$	$\frac{21.44}{25.37} = 0.85$
SUM	205	80***	80***		5.44

* 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 5.44 and when compared to the *critical value* 5.99 (for three surveys) it was less than critical value thus the coverage was not patchy across the three LGAs.

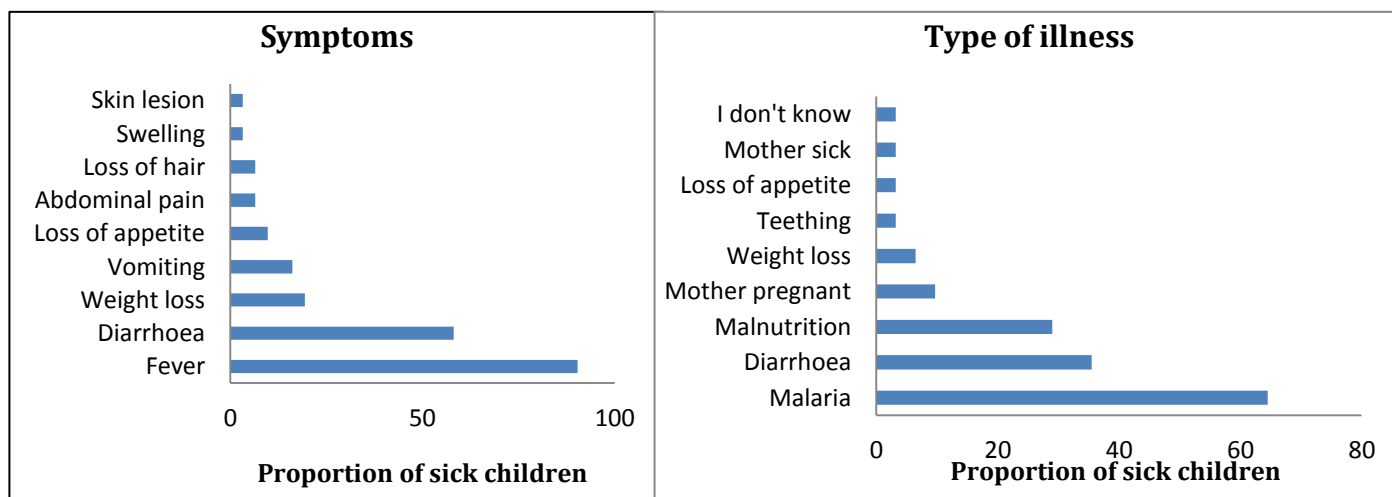
2.6 BARRIERS TO SERVICE UPTAKE AND ACCESS

Questionnaire for carers with SAM cases not in program was administered during the wide area survey. The survey obtained a list of barriers for each LGA as described below

BAKORI LGA

32 (N) mothers of malnourished children not in program were interviewed. 96.9% knew their children were sick. Fever and diarrhoea, were the main symptoms with malaria, diarrhoea and malnutrition mentioned as the main illnesses.

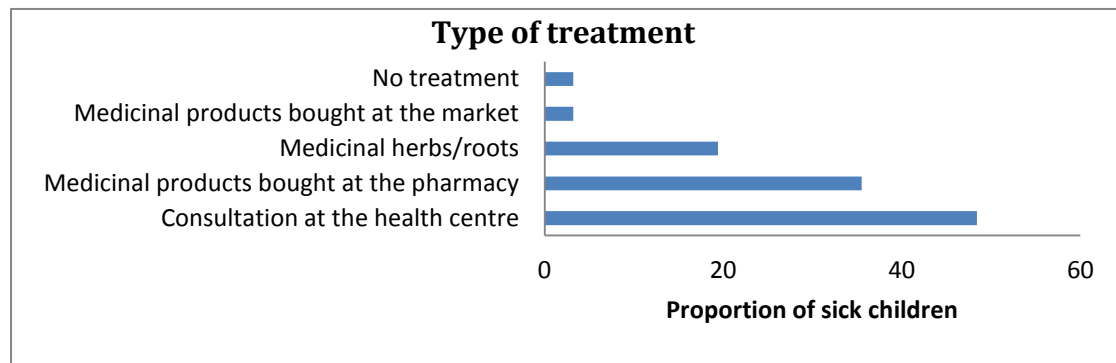
Graph 1: Symptoms and type of illnesses, n=31, Bakori- SLEAC WINNN March 2016





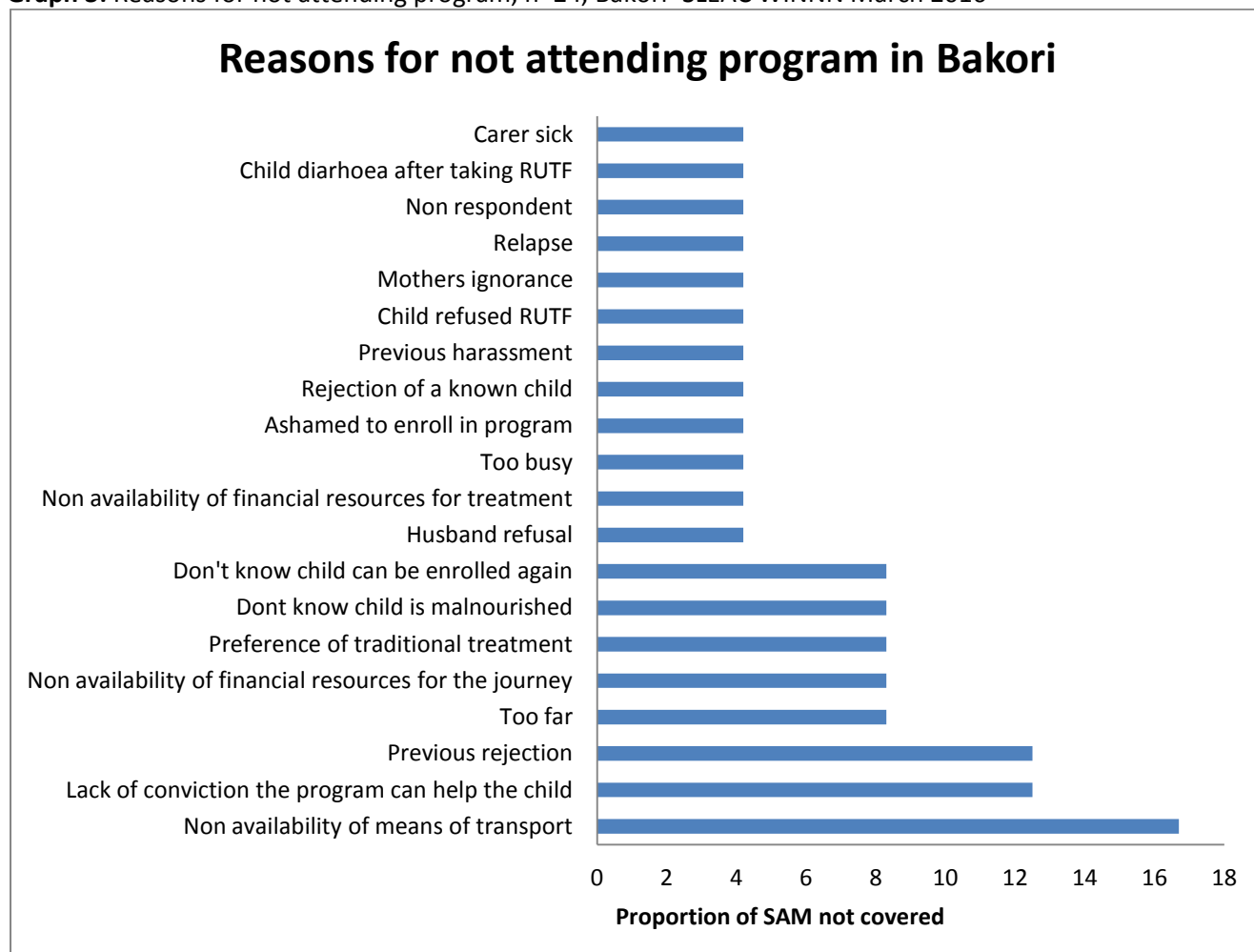
Choice of treatment for the mentioned illnesses was mainly done by fathers at 89.3% (n=25) and mothers at 7.1% (n=2). IYCF support group members also played a role in referring children to the health centres at 3.6% (n=1). 48.4% of the mothers reported to have sought help at the health centre with a significant proportion buying medicinal products from the pharmacy. Medicinal herbs and roots were also mentioned by 19.4%.

Graph 2: Type of treatment, n=31, Bakori- SLEAC WINNN March 2016



In order to determine program awareness, caregivers were expected to mention the service delivery point and type of commodity offered. 77.4% (n=24) were aware of existence of CMAM services. However, mothers were not able to access the services due to distance coupled with lack of means of transport and finances for the journey. Despite the good program awareness, lack of understanding how the program works was evident with mothers not aware that relapse cases should be enrolled again into the program. Previous rejection was an indication that mothers did not know program admission criteria probably because the right information was not provided and no active case finding in the community.

Graph 3: Reasons for not attending program, n=24, Bakori- SLEAC WINNN March 2016



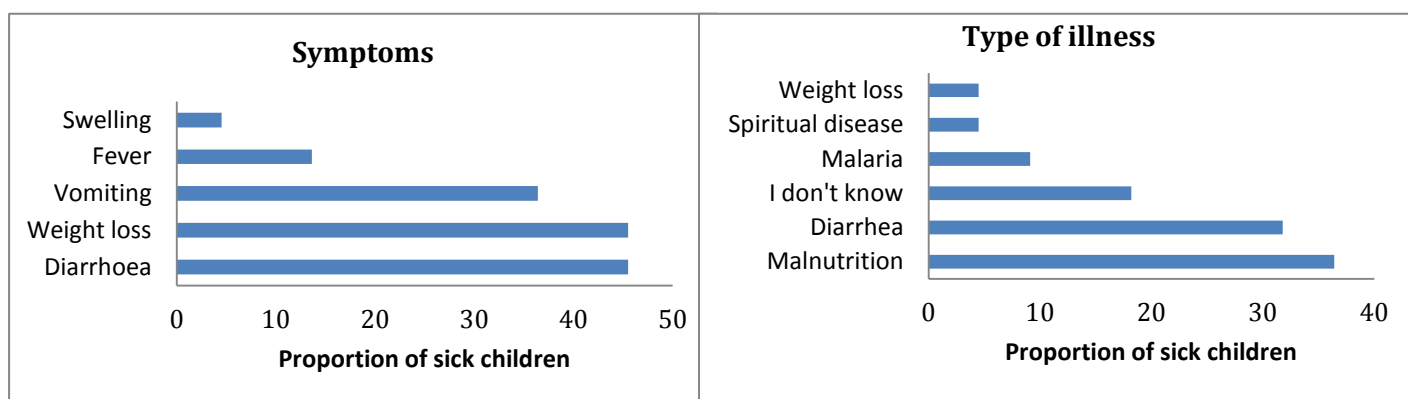


Eight children had previously been admitted into the program whereby three were relapse cases, three defaulters and two non respondents. The reasons for defaulting reported were RUTF caused diarrhea and lack of means of transport.

JIBIA LGA

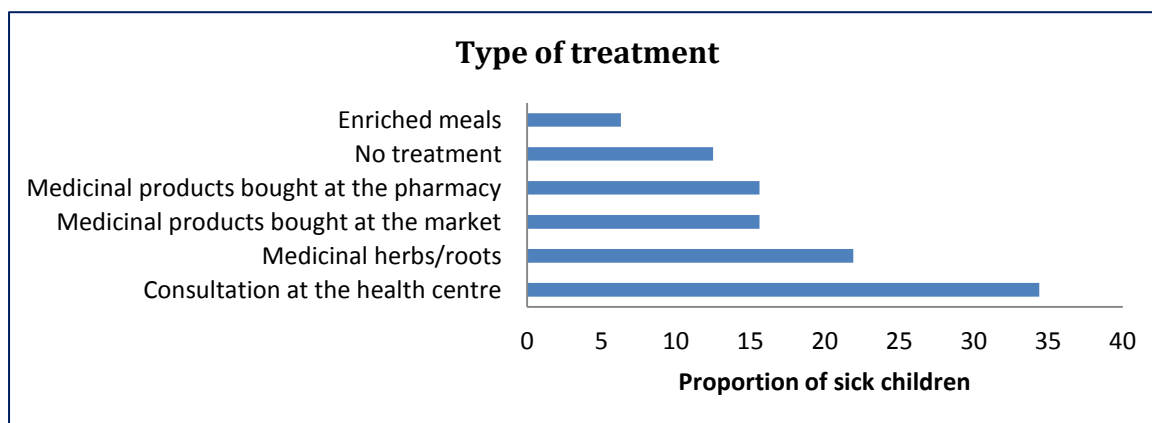
34 (N) mothers of malnourished children not in program were interviewed. 94% (n=32) knew their children were sick with fever and diarrhea as the main symptoms. Malnutrition, which is locally known as *tamowa* was mentioned as the main cause of the symptoms. A significant proportion of mothers didn't know the cause of the symptoms.

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



Various members of the household were reported to have made choice of treatment for the children. Fathers were the main decision makers at 55.2% (n=16) and mothers at 27.6% (n=8). Others included grandfathers, grandmothers, Uncles and neighbors at 6.9%, 3.4%, 3.4%, 3.4% and 3.4% respectively. Consultation at the health centre was the main source of health care with a significant proportion relying on medicinal herbs and roots.

Graph 5: Type of treatment, n=32, Jibia- SLEAC WINNN March 2016

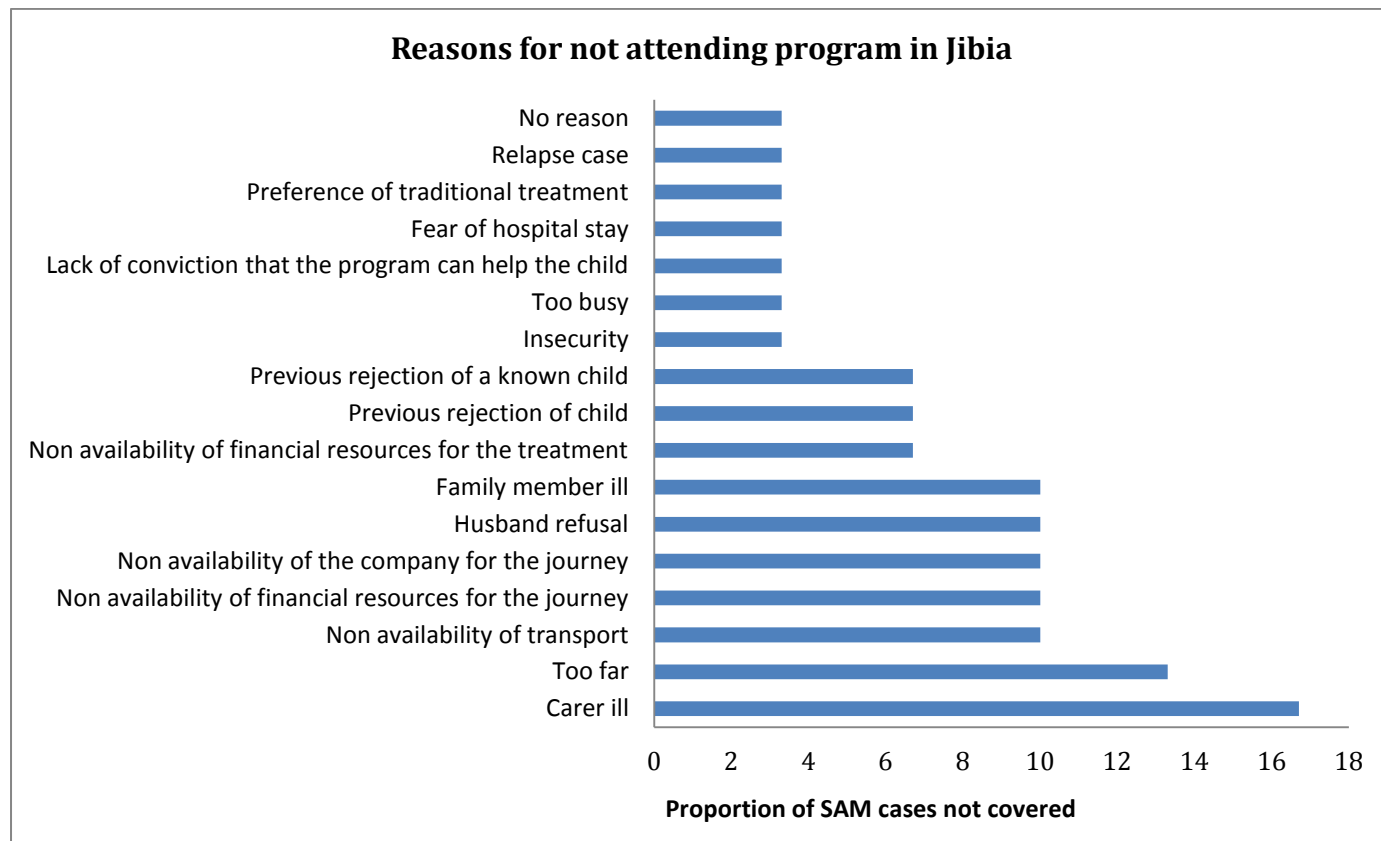


Program awareness was at 93.8% (n=30). Lack of accessibility of the services was again due to distance and lack of means of transport, finances and company for the journey. Minimal support from family members especially when the mother is sick was evident with caretaker being sick mentioned as one of the main reasons for lack of admission into the program.

Six children had previously been admitted into the program; five were relapse cases and one a non respondent whereby the child refused to eat RUTF.



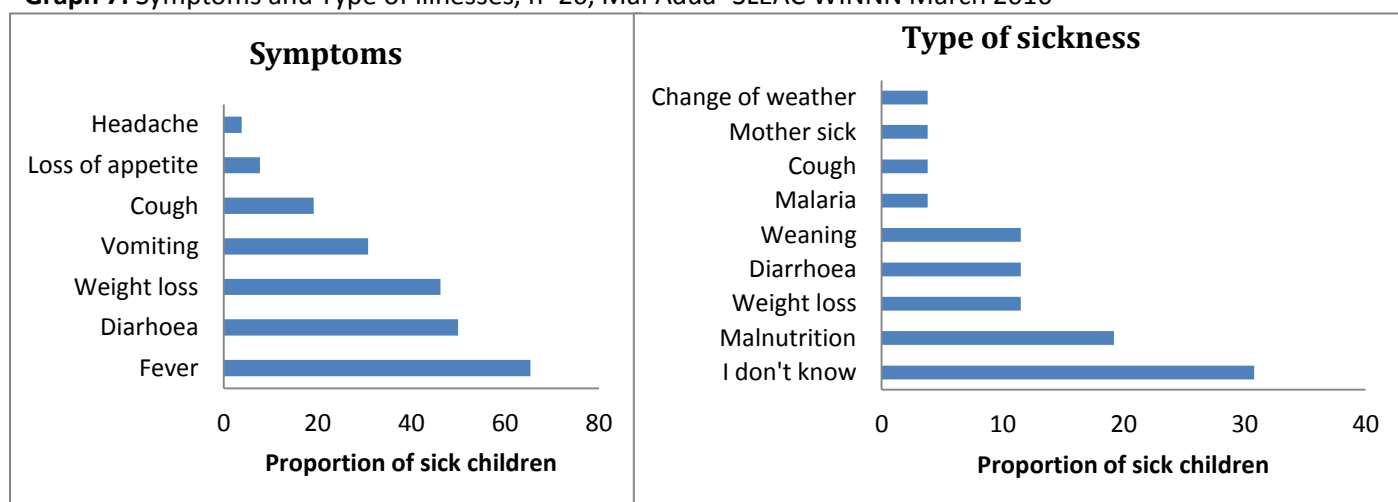
Graph 6: Reasons for not attending program, n=19, Jibia- SLEAC WINNN March 2016



MAI'ADUA LGA

27 (N) mothers of malnourished children not in program were interviewed. 96.3% (n=26) knew their children were sick. Fever and diarrhea were the main symptoms caused mainly by malnutrition. Significant proportion of the mothers didn't know the type of sickness causing the symptoms.

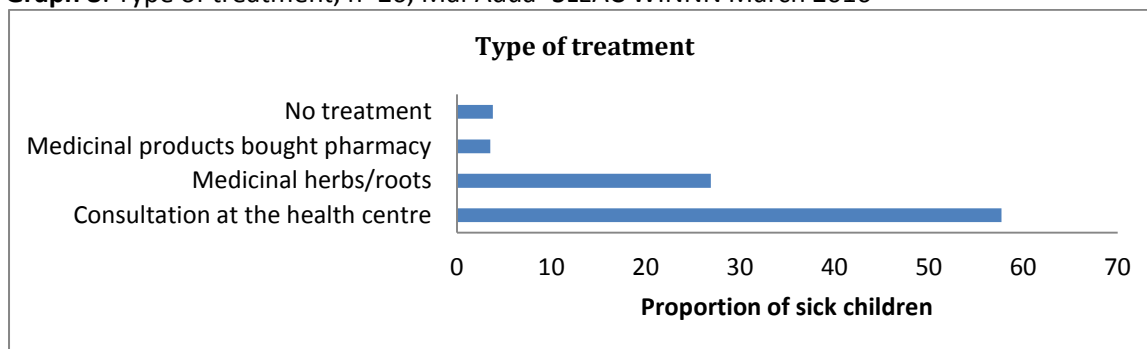
Graph 7: Symptoms and Type of illnesses, n=26, Mai'Adua- SLEAC WINNN March 2016



Choice of treatment was reported to be mainly done by the fathers at 52.0% (n=13). In some circumstances, both parents would make the choice at 32.0% (n=8) with mothers and grandmothers at 12% (n=3) and 4 % (n=1) respectively. Consultation at the health centre was the source of health care majority (57.7%) with medicinal herbs and roots practiced by 26.9%.

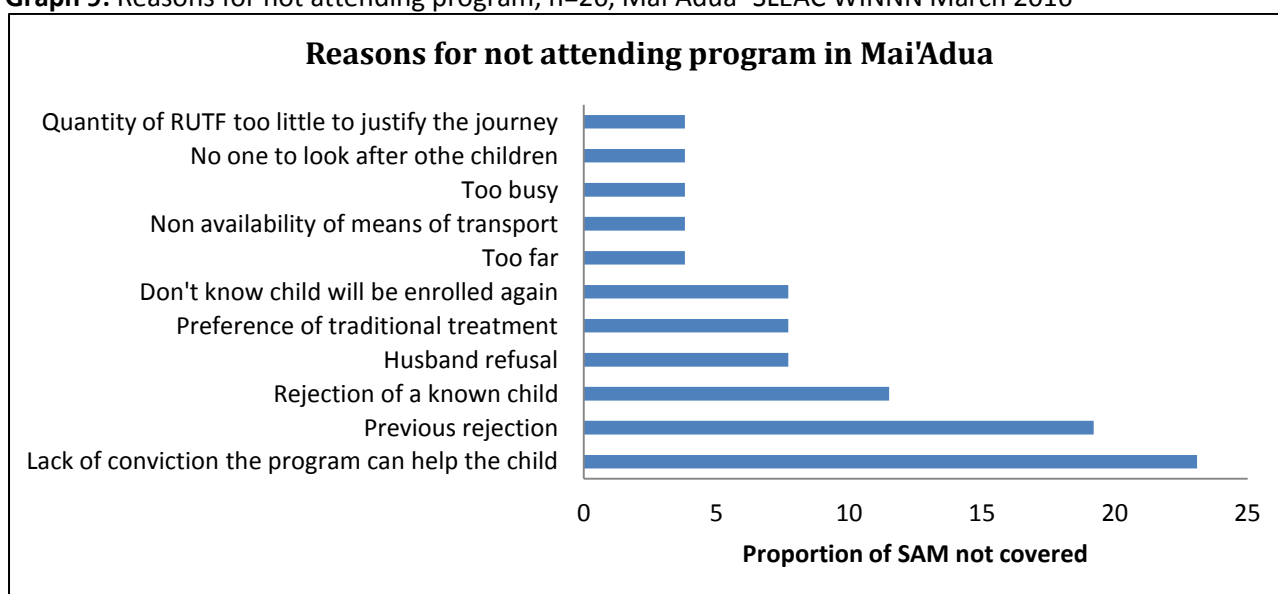


Graph 8: Type of treatment, n=26, Mai'Adua- SLEAC WINNN March 2016



All the mothers interviewed were aware about the program (n=26). The main reasons for not attending the program pointed to inadequate understanding how the program works which included lack of conviction that the program can help the child, previous rejection and not aware that relapse cases can be readmitted again.

Graph 9: Reasons for not attending program, n=26, Mai'Adua- SLEAC WINNN March 2016



Nine children had previously been admitted into the program. Six were relapse cases, two defaulters and one non respondent. The caregivers who were defaulters their children had been admitted in a facility out of coverage area which was experiencing stock outs.

2.7 CONCLUSION AND RECOMMENDATION

Bakoi LGA was classified as having low coverage while Jibia and Mai'Adua LGAs classified as having moderate coverage. Chi Square test indicated that coverage was not patchy across the LGAs with overall coverage at 39% (95% CI: 33% - 45%). This is below the SPHERE standards of 50% for rural areas.

The list of barriers from across the LGAs point towards lack of understanding how the program works despite the good program awareness reported. The SLEAC assessment achieved partially the specific objectives of the program coverage assessment in Katsina State. In order to fully achieve the objectives, Bakori LGA was chosen by the stakeholders for in-depth investigation and analysis of factors affecting program coverage and acceptance. Bakori has the poorest coverage. All barriers in MaiAdua and Jibia are represented in Bakori. Also some unique barriers were unveiled in Bakori LGA such as harassment by program staff and stigma. The results and solutions will be adopted by the other two LGAs where applicable.

3. SECTION TWO: SQUEAC IN BAKORI LGA

The SQUEAC investigation was conducted immediately after the SLEAC survey between 17th March and 2nd April 2016. The SQUEAC investigation was undertaken by seven enumerators who were part of SLEAC survey. In addition, the nutrition focal person for Bakori LGA and a representative from the State joined the investigation team. Two days training on both quantitative and qualitative data collection procedures was undertaken. The investigation process involved stage one and stage two of SQUEAC methodology. Stage three was not included because a SLEAC survey had just been concluded and so the coverage threshold had already been obtained, conducting a wide area survey would not have provided additional information.

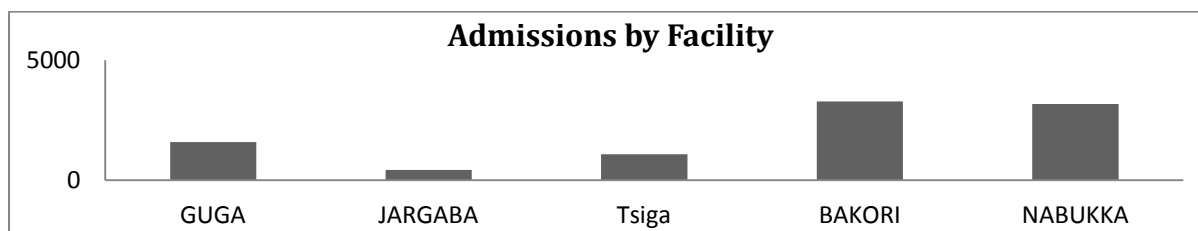
4. INVESTIGATION PROCESS AND RESULTS

4.1. STAGE 1 – QUANTITATIVE DATA ANALYSIS

Routine Program data for the past one year prior to the assessment (March 2015 to February 2016) was analyzed to include admissions, performance indicators and length of stay.

4.1.1. ADMISSION TRENDS

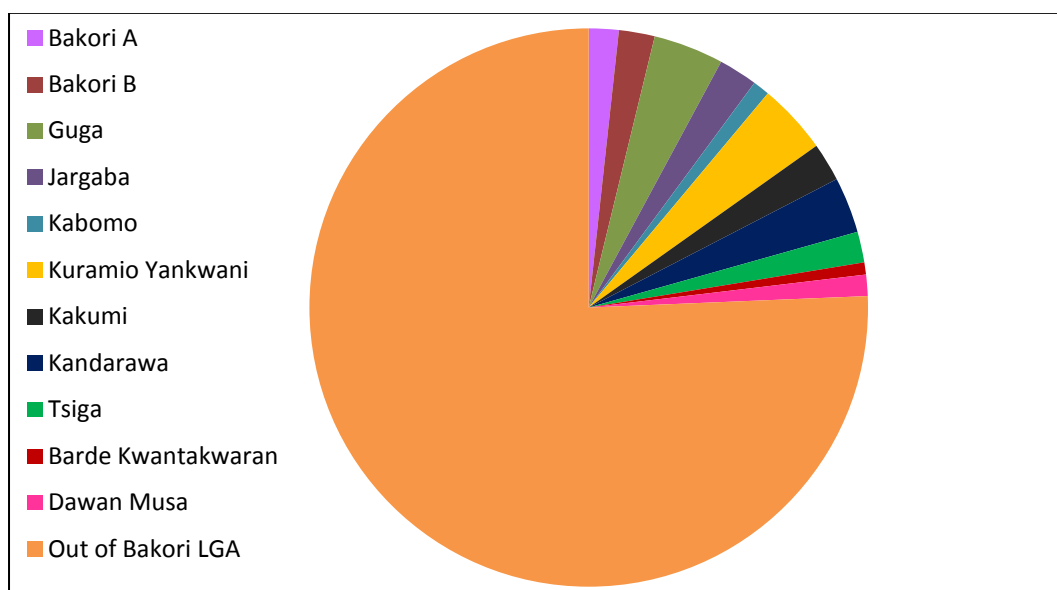
Graph 10: Admission by facility, Bakori LGA, March 2015-Feb 2016 – SQUEAC WINNN March 2016



Bakori, Nabukka and Guga OTP sites admitted many new admissions as a result of influx of beneficiaries from outside Bakori LGA. Beneficiaries from out of coverage area were significant as shown in figure 14.

There are no CMAM services in the neighbouring LGAs and States. Influx of beneficiaries from outside Bakori LGA is stretching the human resource and supplies especially supportive drugs.

Graph 11: Home locations of beneficiaries, Bakori LGA, March 2015-Feb 2016 – SQUEAC WINNN March 2016



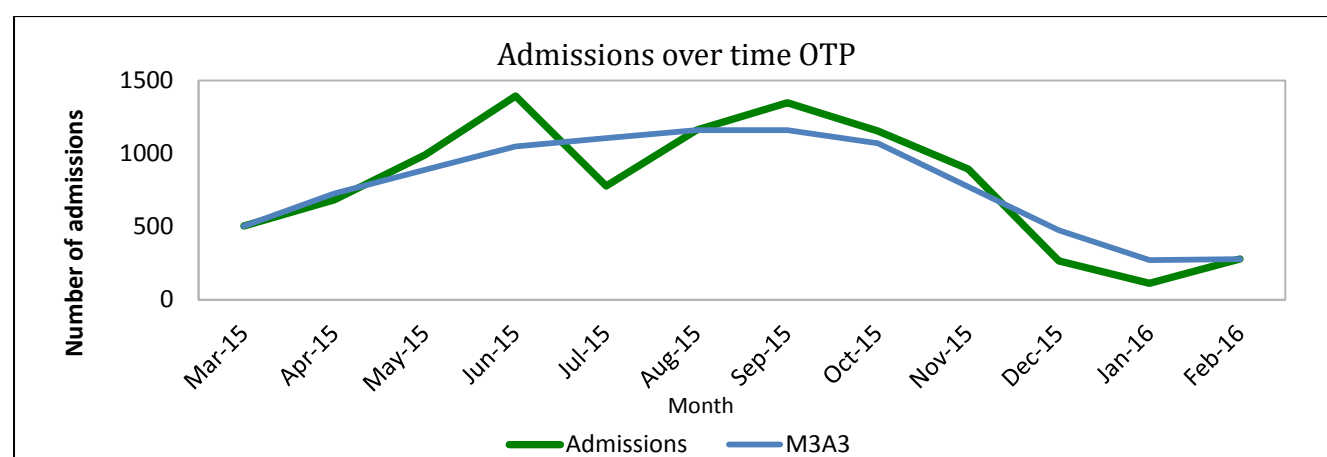


A total of 9000 beneficiaries were admitted in OTP from March 2015 to February 2016.

The activities of CVs (community volunteers) are substandard due to inadequate motivation, monitoring and supervision of their activities. This could explain the low proportion of beneficiaries from within the coverage area. Therefore the trends on admission and performance indicators should be interpreted cautiously as the beneficiaries from out of coverage area have more weight on the indicators.

Admissions over time indicated a gradual decline trend from October which could be attributed to availability of food at household level after harvesting. The program was doing well in admitting more new cases when malnutrition levels are expected to increase from June through September as the food stocks at household level diminishes.

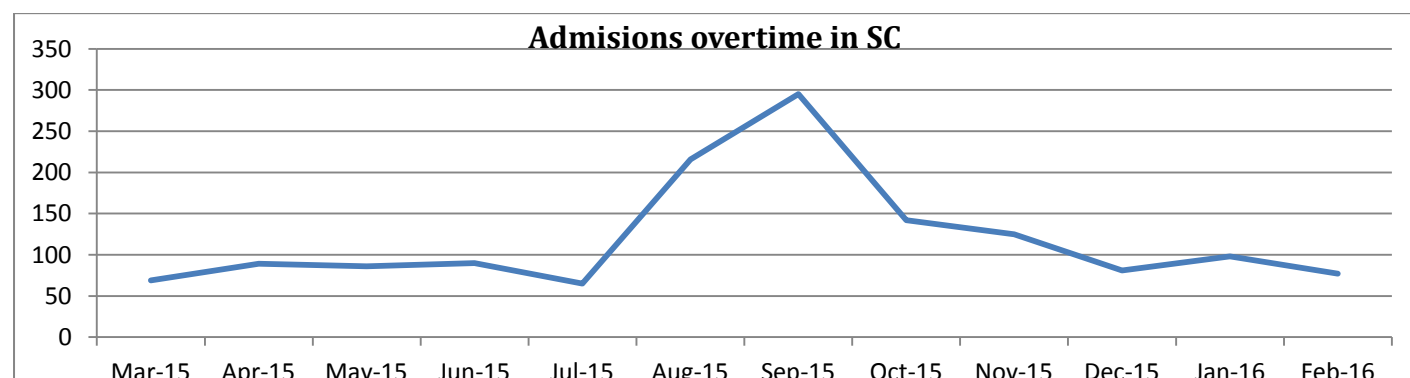
Graph 12: Admission overtime, Bakori LGA, March 2015-Feb 2016 – SQUEAC WINNN March 2016



	M	A	M	J	J	A	S	O	N	D	J	F	
Seasons	Dry spell (hot)		Rain season					Dry spell (Cold)					
Childhood diseases	cough, Measles												
			Malaria										
		Diarrhoea											
Labor demand	Labormigration		Farm casual labour					Harvesting & processing				Labor migration	

SC admissions increased in August and September at the peak of hunger season just before the harvesting season. Admissions stabilized during the harvesting time as expected. A total of 1433 children were admitted in SC from March 2015 to February 2016

Graph 13: SC admissions overtime, Bakori LGA, March 2015-Feb 2016 – SQUEAC WINNN March 2016



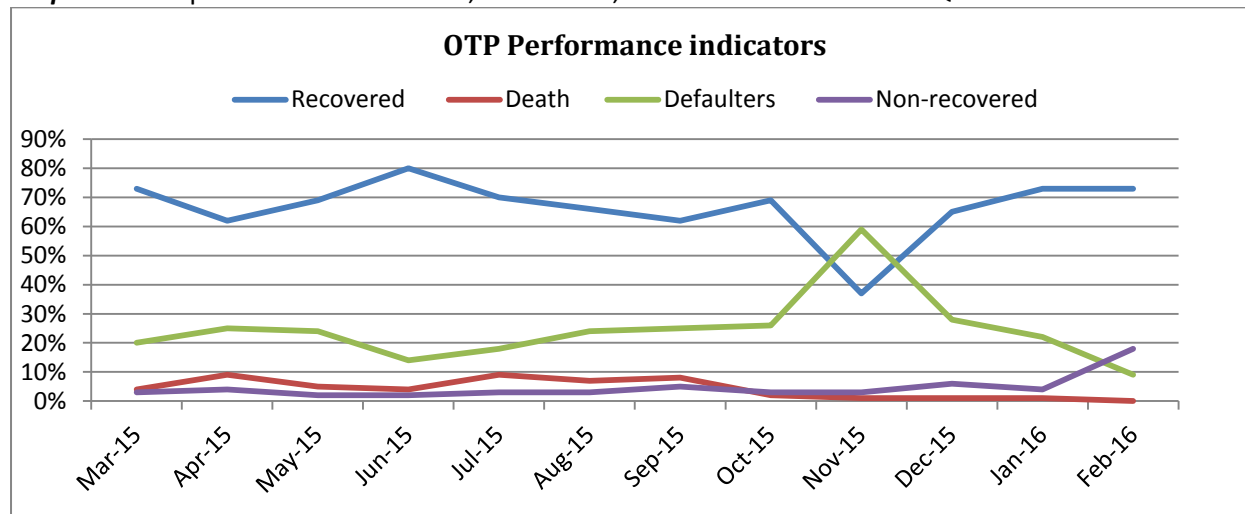
4.1.2. PERFORMANCE INDICATORS

Cure rate was generally below the SPHERE standards of 75% with high defaulter rate affecting program performance. Defaulter tracing of beneficiaries from out of coverage area was impossible. The spike in defaulting in



November was due to availability of food at household level and also because it's a season for social celebrations such as weddings³

Graph 13: OTP performance indicators, Bakori LGA, March 2015-Feb 2016 – SQUEAC WINNN March 2016



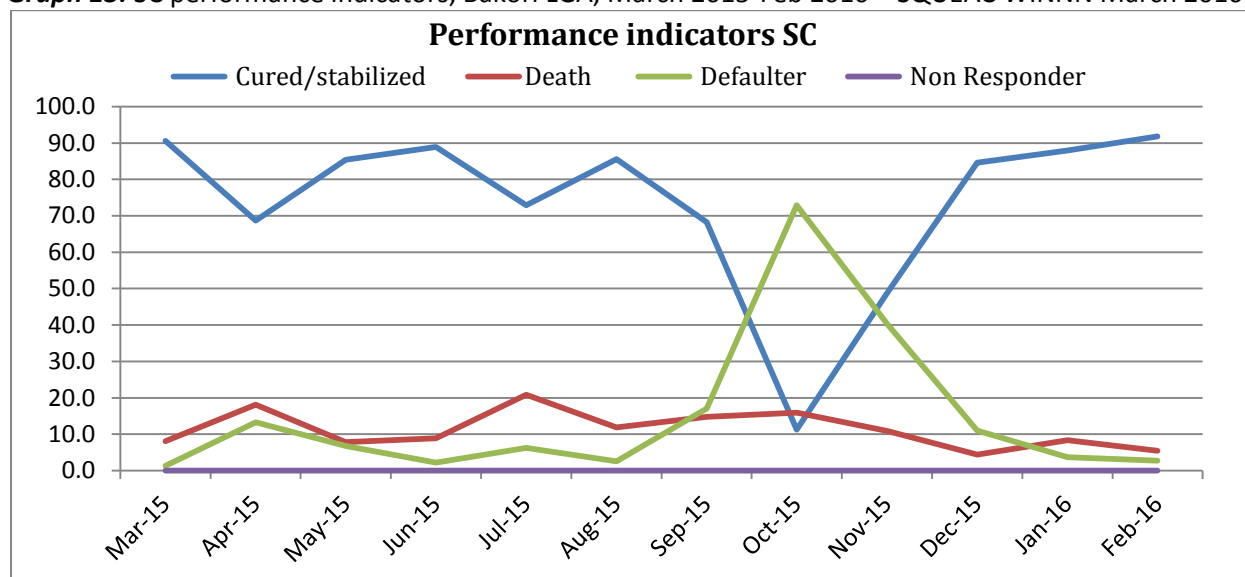
Weak community mobilization component resulted into lack of home visits for defaulters and non respondents within the coverage area. Other reasons for defaulting and non respondents reported included:

- Minimal support from husband's when the mother is ill/pregnant and finances for the journey
- Inadequate supportive drugs in the facility; mothers who cannot afford to purchase the drugs in the pharmacy opt for traditional treatment. Inadequate supportive drugs were also attributed to non respondent cases.
- Poor adherence to program protocols; exit non respondents at eight weeks instead of the recommended 12 weeks. Some children were wrongly admitted to the OTP instead of SC. Poor counselling of OTP beneficiaries was also evident whereby mothers were not aware of SC and also how SC works.

SC was characterized by high death rate of above 10% in most of the months under review. Causes of death of SAM cases admitted in SC were attributed to late presentation; cases came in shortly before death. Poor quality care was also one of the reasons causing the high death rate in the SC which includes:

- Insufficient supportive drugs
- Children miss two feeding times, i.e. 12 am and 3 am
- Understaffing- two staff trained with four casuals who have never received any training on management of SAM with complications

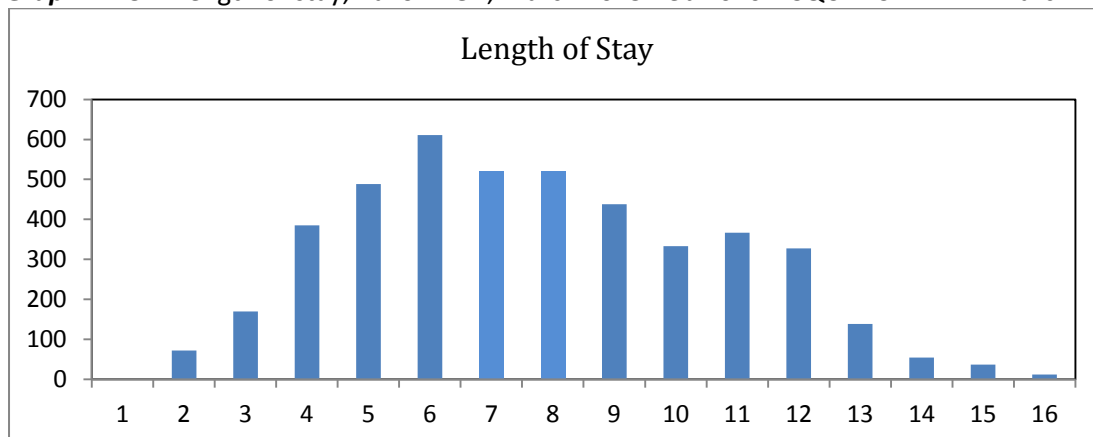
Graph 13: SC performance indicators, Bakori LGA, March 2015-Feb 2016 – SQUEAC WINNN March 2016





4.1.3. LENGTH OF STAY

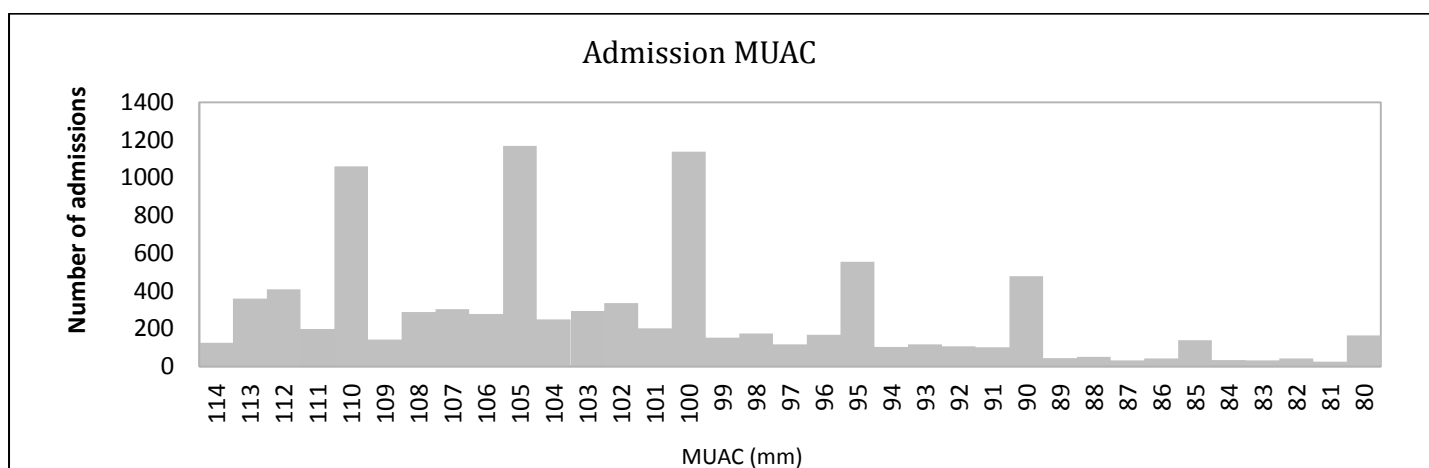
Graph14: OTP length of stay, Bakori LGA, March 2015-Feb 2016 – SQUEAC WINNN March 2016



Median and average length of stay of cured cases in OTP was 7 and 8 weeks respectively. This is good however; most cases especially in Bakori OTP were not given two consecutive visits after attaining MUAC of 12.5 cm and above. Length of stay of above 13 weeks indicates poor exit protocols.

4.1.4. MUAC AT ADMISSION

Graph15: MUAC at admission, Bakori LGA, March 2015-Feb 2016 – SQUEAC WINNN March 2016



Median MUAC at admission was at 103mm which indicates late presentation for treatment. Many low MUAC Admissions (MUAC 110 and below) were attributed to:

- poor pathways (traditional treatment) to health care
- cases from out of coverage area
- inadequate active case finding
- lack of understanding how program works by the community owing to poor community sensitization

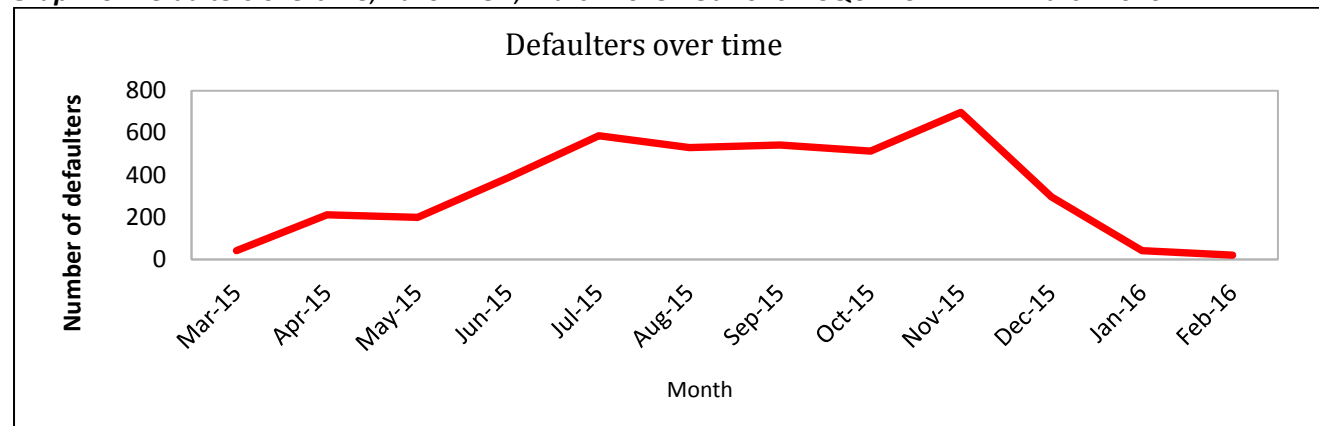
MUAC data also revealed inaccuracy in reading the MUAC measurements with digit preference of .0 and .5.

4.1.5 DEFAULTERS OVERTIME

Defaulters are increasing during the rainy season when mothers are busy in the farms. Nevertheless, most defaulters were experienced in November due to availability of food at household level and also because it's a season for social celebrations such as weddings. Due to high number of defaulters from out of Bakori LGA, phone calls were introduced in October 2015 to assist in defaulter tracing which contributed to the gradual decline on defaulters.



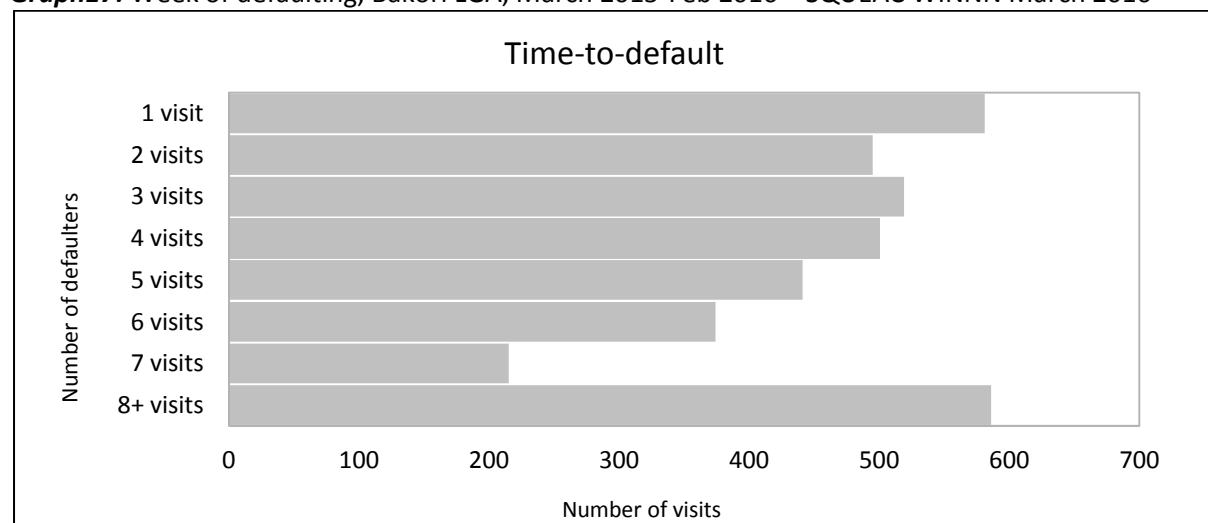
Graph16: Defaulters overtime, Bakori LGA, March 2015-Feb 2016 – SQUEAC WINNN March 2016



	M	A	M	J	J	A	S	O	N	D	J	F
Seasons	Dry spell (hot)		Rain season					Dry spell (Cold)				
Childhood diseases	cough, Measles											
			Malaria									
		Diarrhoea										
Labor demand	Labour migration		Farm casual labour					Harvesting & processing			Labour migration	

4.1.6 WEEK OF DEFAULTING

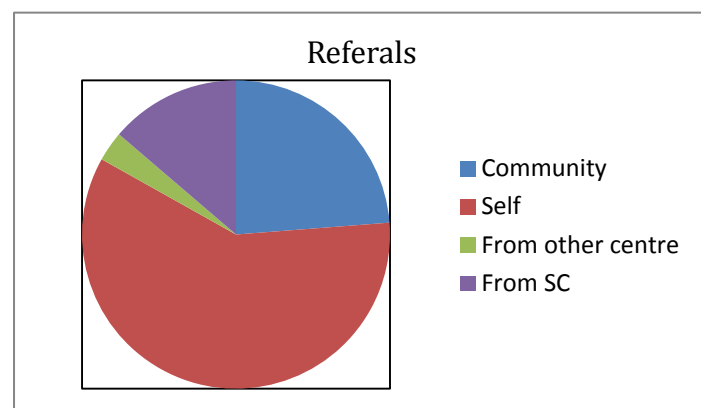
Graph17: Week of defaulting, Bakori LGA, March 2015-Feb 2016 – SQUEAC WINNN March 2016



The median week of defaulting was at 4 weeks which also corresponds to the period of significant improvement of SAM cases upon commencement of treatment. This is an indication that the program was not doing well in retaining cases for adequate care which could be attributed to caregivers not fully understanding how the CMAM programme works and lack of defaulter tracing mechanism for the program.

4.1.7 REFERRALS

Graph18: Source of referral, Bakori LGA, March 2015-Feb 2016 – SQUEAC WINNN March 2016



Good opinion about the CMAM program triggered self referrals. Good opinion about the program was as a result of cured cases observed within the community. Caregivers of children in program reported to have been mainly referred from the community by old beneficiaries. Further investigations indicated inadequate active case finding by the CVs.



4.2. STAGE 1 – COLLECTION and ANALYSIS of QUALITATIVE DATA

4.2.1 Sampling framework

Table 8: Sampling framework– SQUEAC WINNN March 2016

Themes explored	Sources	Methods
Local understanding of common childhood illnesses and malnutrition	Community members (mothers, leaders, TBAs)	Informal Group Discussions
Child care and treatment of malnutrition and common childhood illnesses	caretakers of children in program, defaulters, non respondents	Observation
Treatment seeking behavior	People implicated	Case Histories (<i>tracing of defaulters, Non Response cases, late admissions and absentees</i>)
Knowledge on the existence of SAM treatment	Health workers to include Nurses, In charges, Nutritionists	Semi-structured interviews
Knowledge on how CMAM works e.g. admission criteria	Program staff (SCI)	Structured interviews
Appreciation of the service		
Community structure and groups		
Community mobilization and channels of communication		
Quality of the care		
Activity of Community Volunteers		
Barriers to access / reason for defaulters and non respondents		
Perception of coverage		
Documentation and reporting		

4.2.2 COMMUNITY STRUCTURE AND GROUPS

Bakori LGA has two wings of administration; political and traditional.

Political administration

LGA chairman is the head of administration supported by 11 councillors, one from each ward. The councillors are directly in contact with the community members. Bakori LGA has one representative as a member of the State House of Assembly who connects the LGA with the State. The LGA Director of health works together with Councillor of health to advocate for health and nutrition issues at the LGA level.

Traditional administration

Bakori LGA has a District head that is responsible for keeping peace and harmony in the community. He is supported by 21 village heads and numerous ward heads. The District head has previously been involved in solving issues of selling RUTF in the community. The District head is a member of Katsina emirate council. The traditional administrators are very important in community sensitization and mobilization.

Bakori LGA is mainly Muslim community, led by four chief IMAMs. The religious leaders who also include several Shells and Maalims lead male congregation during daily prayers and Friday sermon. During the prayers and sermon sessions, the religious leaders usually make key announcements to the community. Religious leaders are therefore potential effective channel of communication especially to the men in the community.



Social groups

Community aid groups are Muslim affiliated groups who are generally tasked with community mobilization on religious issues.

IYCF Support groups-Each ward has 10 groups composed of 3 Female and 2 Male facilitators/Community Volunteers. The support groups serve as a platform to communicate messages on appropriate IYCF practices to pregnant women and mothers of children under 24months as well as experience sharing for participants. Activities carried out at the support groups are provision of counselling, food demonstrations; sensitization of the community on appropriate child care practices and to some extent refer malnourished children to CMAM program.

Community volunteer network- Bakori LGA has Community volunteers, 20 per ward with OTP. Community volunteers are responsible for community sensitization and mobilization for CMAM.

Village development committees are responsible for coordinating development activities in the community. Partners collaborate with the committees to ensure smooth delivery of services to the community especially community sensitization and mobilization.

Child care is responsibility of Women. But; they always seek permission from their husbands to take children to the health facility, which is not always granted. Some husbands do support the women with finances for the journey. However, women reported minimal support from their husbands. Women reported that they miss or default from CMAM program when they are sick, pregnant or no body to care of the other children.

4.2.3 ORGANIZATIONS SUPPORTING HEALTH AND NUTRITION IN BAKORI LGA

CMAM program has three main stakeholders:

UNICEF: Supplies RUTF, F100, F75 and Supportive drugs

Save the children: Responsible for capacity building and ensure quality programme implementation, transportation of supplies, advocacy, supportive supervision and coordination.

Local government: Provision of technical human resource. The government finally released some funds from April 2016 to support CMAM program in Bakori LGA.

4.2.4. COMMUNICATION CHANNELS

Several channels of communication exist in Bakori LGA; however, their full potential has not been fully utilized to strengthen CMAM community mobilization component. This information was gathered through interviews with key informants in the community to include community and religious leaders.

Town announcers use mega phones and go round the towns and villages to disseminate information from **community leaders** and groups. Town announcers are reported to have been involved in mobilizing the community on CMAM activities, especially on distribution dates. Traditional **community leaders and social groups** play a key role on passing information to the community members.

Religious and social gatherings: Religious leaders make announcements in the mosques during prayers and sermon sessions targeting men. Religious leaders reported to have been involved in community mobilization activities by CMAM staff. During social gatherings such as child naming ceremonies, CVs and IYCF support group members make announcements regarding health and nutrition for children.

Radio jingles and dramas: Radio stations using the local language play jingles and dramas mostly for entertainment and advocating for good moral values in the community. This is a very effective channel of communication since most families own a radio.

Mobile phones: Most families own at least one mobile phone. Use of mobile phones has proved useful in follow up of defaulters and absentees from out of coverage area.

Printed materials: IEC materials mostly with visual graphics are appropriately used during health talks and food demonstrations. However, IEC materials on CMAM are not available.

Table 9: Channels of communication- SQUEAC WINNN March 2016

Channel of communication	Perceived effectiveness
Town announcers	Very effective
Religious and social gatherings	Very effective
Village development committees	Very effective
Community leaders	Very effective



Radio jingles and dramas	Effective
Mobile phones	Effective
Printed materials	Effective

4.2.5 LOCAL UNDERSTATING OF CHILDHOOD ILLNESS AND MALNUTRITION

Malnutrition is locally referred to as *Tamowa*. It is a sign of hunger, poor hygiene and illness.

In some circumstances, it is associated with witchcraft and spiritual disease especially if the child is not suffering from common symptoms such as diarrhoea. Another strong belief on the cause of malnutrition is the breast milk when the mother is expecting another child while still breastfeeding. The breast milk during pregnancy is believed to be infected, thus causes diarrhoea if child is breast fed.

Common childhood illnesses include: Diarrhoea (also associated with teething problems), Measles, Cough and Malaria.

4.2.6 TREATMENT OF ACUTE MALNUTRITION AND OTHER ILLNESS

Consultation at the health facility when child is sick is the main health seeking behaviour. Mothers also purchase medicinal products from the pharmacy and market. Bakori LGA has 72 health facilities; one comprehensive health centre, one maternal child health centre, four public health centres, 54 health clinics and 12 health posts. Routine immunization is conducted in 60 health facilities whereby 30 of them conduct outreach services. CMAM services for treatment of severe acute malnutrition are offered in five facilities distributed in five wards. OTP component is offered by all the five facilities, however, only one facility with inpatient component. Awareness about the OTP is high, however, lack of understanding how the program works hinders uptake of the services. On the other hand, awareness about SC services is very low.

Traditional healers and medicinal herbs/roots exist in the community. Community members consult the traditional healers when they suspect the disease is spiritual or witchcraft. Other reasons for traditional treatment for malnourished children included lack of understanding how the program works, insufficient supportive drugs and previous rejection.

IYCF is one of the components of WINNN project. Uptake of IYCF has played a role in improving nutritional status of young children. Mothers reported to practice exclusive breastfeeding for the first 6 months though some still give water. Mothers used to express and discard colostrum but through IYCF, they have learnt that colostrum is essential for boosting immunity and the growth of their children. Timely and appropriate complementary feeding practices were reported with food demonstrations playing a key role in ensuring that children are fed well balanced diet.

4.2.7 COMMUNITY MOBILIZATION STRATEGY

Weak community mobilization strategy for CMAM was unveiled. Community volunteer network is limited to cover only five wards with a facility offering CMAM services. Lack of CV motivation has resulted to go slow on community activities by the CVs and some of the CVs have since defaulted. CVs neither conduct active case finding nor home visits for defaulters and non respondents. Facility In charges, CVs and observations confirmed that CVs come late during OTP day owing to lack of facilitation for transport. CVs have received two classroom trainings, one during the inception of CMAM program in 2013 and refresher training in November 2015. However, supervision and monitoring of CV activities is not adequate as the activities of CVs are in the communities for which they are in control of their time. The last coordination meeting with CVs was in July 2015.

Community and religious leaders have been involved in community mobilization; however, coordination of their activities is very weak. The last coordination meeting with community and religious leaders in Bakori LGA was in March 2015.

SWOT analysis for the community mobilization strategy was done as presented in table 10.

Table 10: SWOT analysis for community mobilization strategy- SQUEAC WINNN March 2016

STRENGTHS	WEAKNESSES
• Presence of community volunteers • Capacity building of CVs • Involvement of community religious leaders	• Lack of motivation for CVs • Inadequate linkage of SC and OTP • Inadequate integration of CMAM into existing



- | | |
|--|---|
| <ul style="list-style-type: none"> • Linkage of IYCF and CMAM • Health talks during routine immunization and growth monitoring sessions • Good perception about the program | <ul style="list-style-type: none"> • health services and procedures • Poor supervision and monitoring of community mobilization activities • CVs network limited to wards with a facility offering CMAM services • Inadequate active case finding and home visits for non respondents |
|--|---|

OPPORTUNITIES	THREATS
• Good road network • Good spatial distribution of health facilities • Presence of affordable effective communication channels • Existence of outreach services for routine immunization	• Inadequate funds • Distance from service delivery points • Many beneficiaries from out of coverage area

4.2.8 DATA TRIANGULATION

The BBQ (Boosters, Barriers and Questions) tool was adopted in organizing the data with boosters and barriers to program uptake and access identified as presented in table 11.

Barriers listed during the SLEAC survey were also investigated for better understanding and validation; therefore, some of the barriers were not validated.

The factors were given a score between 1 and 5 based on perceived weight on coverage. The higher the score, the more weight the factor has on coverage.

Table 11: Boosters and barriers -SQUEAC WINNN March 2016

SCORE	Boosters	Source	Source	Barriers	SCORE
5	Constant supply of RUTF	Observation, program staff, caregivers, community leaders, Health workers	Program staff, Health workers, Routine data	Poor coordination among the stakeholders	5
5	Good perception about the program by Community	Fathers, Mothers, Religious leaders, community leaders, TBA, Health workers, CVs, program staff	Routine data, observation, health workers, program staff	Poor adherence to program protocols (poor counseling, admission, MUAC taking, discharge)	5
4.5	Program awareness	Fathers, CV, Religious leaders, mothers, community leaders, town announcers, TBA, Traditional healers	Mothers, health workers, observation, program staff	Poor conditions in the SC	5
4.5	Health educations at the facilities	Observation, mothers, Fathers, CV, Health workers	Mothers, fathers, observation	Inadequate understanding how program works	5
4	CMAM capacity building (class room, OJT, supervision)	CV, Health workers, observation, program staff	Mothers, TBA, Observation, community leaders, Program staff	Inadequate support from husbands	4.5
4	Involvement of religious and community leaders	Religious leaders, Village heads, Town announcers, health workers	Observation, program staff, Health workers	Poor integration of CMAM to existing health services	4.5
4	Linkage between IYCF and CMAM	Community leaders, Observation, Support group, mothers	CV, Program staff, Health workers	Poor supervision and monitoring of community mobilization strategy	4.5
3	Screening(passive)	CVs, Health workers, Fathers, Mothers, community leaders	Fathers, Program staff, CV, routine data, observation	Inadequate active case finding	4
3	Understanding of malnutrition and causes	Fathers, mothers, TBA	Program staff, Health workers, CVs, Observation	Lack of motivation for CVs	4
2.5	RUTF seen as medicine	Children, caregivers, religious and community leaders	Mothers, program staff, Health workers, Observation	Inadequate supportive drugs	4



COVERAGE ASSESSMENT

» SEMI-QUANTITATIVE EVALUATION OF ACCESS & COVERAGE



2	Strategies to control selling of RUTF	Observation, CV	Health workers, observation, mothers	Inadequate enrollment cards	4
			Observation, Health workers, CV	Lack of CMAM IEC materials	4
			Mothers, Fathers, TBA, Traditional healer, observation	Traditional treatment	4
			Mothers, Health workers, program staff	Inadequate linkage between SC and OTP	3.5
			Mothers, Fathers, Religious leaders, program staff, health workers, Community leaders	Distance	3.5
			Care givers for Defaulters and non respondents, community leaders, cvs	Inadequate home visits for defaulters and non respondents	3
			Fathers, mothers, observation	Competing activities among caregivers –household chores & child care	2
			Program staff , Health workers, children	Sale of nutrition products (by caregivers)	1.5
			Fathers	Nepotism	1
			Fathers, observation, workers, program staff	Long waiting time during health distributions	1

Boosters

- ➔ **Good capacity building:** This has been attained through training during the inception of the CMAM program followed by refresher trainings. Follow up trainings in form of **OJT and supervision** was reported by health workers.
- ➔ **Constant supply of RUTF:** No stock outs for RUTF reported for the last one year prior to the assessment. This has resulted into **good perception about the program by the community**. A significant proportion of new beneficiaries were as a result of self referrals indicating that the community had positive opinion about the program. Mothers with children in the program played a key role in creating awareness of the program and referring their neighbour's children.
- ➔ **OTP Program awareness:** Community members including the religious and community leaders were aware about the program whereby they could identify RUTF, service delivery points and days of distribution. Program awareness has been attained through community mobilization whereby **involvement of local leaders** has been paramount. **Health education sessions** at the facilities during distribution and routine immunization as reported by health workers and observations have helped in creating program awareness.
- ➔ **Linkage of IYCF and CMAM:** It was observed that health talks during OTP day and routine immunization included topics on IYCF and CMAM. Also, IYCF counselling is provided during OTP Clinic days for caregivers of CMAM beneficiaries. IYCF support group members during the course of their duties usually refer malnourished children to the program. However, the linkage still needs to be strengthened.
- ➔ **Screening of children** through passive screening was the main point of identifying malnourished children. The investigation team observed MUAC tapes placed on most of the consultation room tables. Some of the caregivers reported that they had come for routine immunization and during illness when their children were screened and referred to the program.
- ➔ **Strategies to control selling of RUTF:** Sale of RUTF by caregivers was reported. In order to curb selling of RUTF, beneficiaries are requested to bring back the empty sachets during the next distribution. Moreover, **RUTF is seen as medicine** and this has reduced sharing of RUTF with other household members.

Barriers

- ➔ **Poor community mobilization activities by CVs** was reported in all the wards. Various factors leading to inadequate active case finding included; lack of CVs in six wards, **no motivation for the existing CVs** and no financial support for transport. As a result, CVs rarely conduct door to door case finding. CVs also rarely use their MUAC tapes to confirm cases before referral. This has resulted to some cases being rejected if they don't meet the admission criteria. Case histories of defaulters and non respondents confirmed **lack of home visits by CVs**. Less activities in the community by CVs has resulted into **Lack of understanding how the program works by the community members and caregivers**. Admission and exit criteria is not well understood with caregivers of malnourished children not in program failing to go to the program due to fear of rejection. Majority were neither aware of existence of SC component nor the admission criteria. This has been worsened by **inadequate monitoring and supervision of the community mobilization strategy** which has weakened the community outreach component of the CMAM program.
- ➔ **Poor coordination of CMAM implementation by stakeholders** has resulted into confusion in delivering services to the community members. Contributions of each stakeholder towards achieving the goals of the program need to be well documented and have clear transition plan to ensure sustainability of the program by the government. There was no reason given for **insufficient supportive drugs, enrollment cards and poor conditions in the SC** which has caused the program to suffer significantly. Also stakeholders were reported to have passed contradicting protocols to the health workers. For instance, exit criteria for non respondents at eight weeks contrary to the national guideline.
- ➔ **Insufficient supportive drugs in the facility** have compromised the quality of care. Caregivers who cannot afford the drugs in the pharmacy opt for traditional treatment. Cases of non respondents and high rate of deaths were associated with insufficient supportive drugs. This confirms the barrier listed during SLEAC assessment that mothers were complaining lack of finances for treatment.
- ➔ **Inadequate enrollment cards:** Health workers reported that admission of new beneficiaries stops when enrollment cards are out of stock. During this period, caregivers opt for traditional treatment and this also explains the low MUAC measurements at admission. This has also affected documentation because



sometimes the health workers improvise the enrollment cards for very severe cases which miss some of essential information for reporting.

- ➔ Despite the continuous capacity building, **poor adherence to program protocols** was evident. Wrong admissions to the OTP instead of SC especially for children with less than 3.5kg were observed. Exit criteria of non respondents at eight weeks and cured cases before attaining MUAC of above 12.5cm for two consecutive visits. Poor counseling of beneficiaries whereby caregivers did not understand the admission and exit criteria as well as linkage of SC and OTP components. Some mothers defaulted from OTP when their children refused to eat RUTF, meaning that beneficiaries did not understand the reasons behind appetite test which is done during every distribution. Routine data indicated poor MUAC measurements. To confirm skills on MUAC taking, three CVs were randomly selected and given one child to measure. Surprisingly, they did not demonstrate confidence on the procedures with different measurements of 7.0, 9.3 and 10.0. However, **lack of IEC materials for CMAM** could have resulted to poor command on simple instructions by the health workers and CVs. It was observed that during distributions, CVs majorly use the IEC materials for IYCF and micronutrients with less emphasize on CMAM key messages. This also has a stake on lack of understanding how the program works because the power of visual content is well known.
- ➔ **Poor linkage of OTP and SC components** was evident. Follow up of transferred cases to ensure they are successfully admitted in the other program was not done. During transfer from OTP to SC, mothers were not given the right information on what to expect in the SC. Mothers reported to have been told services in the SC are free just to be shocked at admission when asked to pay money for purchasing detergents and firewood.
- ➔ **Poor conditions in the SC** were worrying with mothers just holding on, desperate for help for their children. High death rates witnessed in SC confirmed poor quality of care. Children usually miss early morning feeds at 12 am and 3 am because there is no health worker available for night shift. SC in charge reported that HIV and TB screening is not done for the children. Mothers who could not afford meals and supportive drugs had to opt for traditional treatment. Poor hygiene was observed with caregivers expected to buy detergents and clean the wards by themselves. One of the caregivers was transferred from OTP to SC but defaulted at the door owing to poor hygiene in the wards. Mattresses in the SC were reported to be inadequate with mothers bringing on board mats from home; thereby mothers with children sleep on the floor.
- ➔ **Distance from service delivery point to some of the communities** coupled with lack of finances and company for the journey especially in the wards without a facility offering CMAM services was mentioned as a barrier to access of services. OTP awareness in these communities was low compared with communities with wards with a facility offering CMAM services.
- ➔ **Caregivers also reported to have competing activities** mainly household chores and child care thus unable to attend the program resulting into defaulters and late presentation for treatment.
- ➔ **Minimal support from husbands** was observed whereby mothers could not attend OTP Clinic due to childcare and when the mother is ill. Sometimes the mothers do not get financial support for the journey and meals in the SC from their husbands. **Lack of understanding how the program works** contributed to the husbands not supporting the mothers. For instance, one of the husbands during a distribution did not understand why his child, six months old, weighing 3 kg was referred to SC. The husband insisted that the child should be given RUTF and go home. Finally, he was furious and left together with his child and wife. In most cases, husbands refuse their wives to stay in the SC because nobody to take care of the other children at home.
- ➔ Poor pathways to health care especially **traditional treatment** and purchasing medicinal products available at the pharmacy and markets were some of the main factors for late presentation. This came strongly during case histories for care givers who sought OTP services when their children were very sick with MUAC of less than 110mm. Some of the caregivers reported to have gone for traditional treatment when their children did not respond to treatment in the CMAM program or were unable to afford supportive drugs and money for meals, detergents and firewood in SC. **Inadequate integration (mainstreaming) of the CMAM into the existing health services and procedures** has also contributed to low uptake of CMAM services. It was revealed that admission of new cases is done once in a week, whereby caregivers who come to the health facility either for routine immunization or treatment for other childhood illnesses are not admitted into OTP immediately but have to wait until the designated day for admission. This has resulted to mothers opting for traditional treatment (some never come back) and also low MUAC measurements at admission.

addition, some of the trained health workers on CMAM rarely participate during OTP days; basically CMAM is seen as additional workload.

- ➔ **Sale of RUTF:** This is done by caregivers with children in program, though very minimal. The District head has been actively involved in ensuring that caregivers do not sell RUTF as well as returning the empty sachets during the next distributions.
- ➔ **Long waiting time** was observed and confirmed by husbands who claimed that their wives stay too long in the OTP sites. In some circumstances, caregivers from far communities sleep overnight at the OTP centres waiting to queue the next day morning especially at the peak of hunger period in July and August when beneficiaries are many. **Nepotism** was also reported whereby CVs serve the caregivers they closely know especially from their wards first. As a result, mothers who come first queue for long hours. This was strongly reported by the men who recommended for external supervisors during OTP days and could also be a reason why there is minimal support to their wives. The program staff and health workers did not deny the allegations but agreed to investigate to ascertain whether it is happening.
- ➔ Some of the listed barriers obtained during the SLEAC survey were not confirmed such as **harassment by the OTP staffs**. However, this is an issue which needs to be monitored closely by the program staff. One defaulter reported that she stopped coming to the program because she was expectant and though her new born has grown, she has not come back as she fears embarrassment from the OTP staff. Also another mother reported that she was absent because she lost her card and she fears embarrassment from the OTP staff. **Lack of conviction that the program can help the child** was mentioned during the SLEAC survey. The same mothers were followed up during the SQUEAC investigation to get more information as to why they thought that the program could not help their children. The mothers simply did not understand the admission criteria into the program thus believed that their children could not fit the target criteria of the program.

Diagram 5: Concept map--SQUEAC SCI March 2016





4.3. STAGE 2 – HYPOTHESIS DEVELOPMENT and SMALL SURVEYS

The objective of this stage was to confirm areas of high and low coverage based on the boosters and barriers identified in Stage one. The proportion of children with low MUAC at admission (<110mm) was significant as indicated by the routine data. Data from SLEAC wide area indicated that coverage was homogenous (low) across the geographical coverage area. The investigation team endeavoured to understand the reasons for late presentation and uniform coverage across the LGA. The main reason for late presentation and low coverage was attributed to inadequate community mobilization activities across the coverage area (all wards with and without CVs). Presence of CVs in five wards with OTP did not make a difference since the CVs were inactive owing to low motivation. Inadequate community mobilization activities resulted into inadequate active case finding and lack of understanding how CMAM program works by community members. This information was confirmed by the CVs, caregivers, health workers and program staff. Two sets of hypothesis were developed.

- Majority (> 50%) caregivers across the coverage area did not understand how CMAM program works (at least understanding of the admission criteria using MUAC colours)
- There is inadequate active case finding across the coverage area (>50%)

A small study was therefore conducted to test the hypothesis. 10 communities were randomly selected, one from each ward. The EPI5 (Expanded Program on Immunization) sampling method was used to select 10 households from each of the selected communities. The EPI5 sampling method was used because it is known to return a sample similar to a simple random sample of households⁴. The first household is selected by choosing a random selection from the centre of the community, and picking the first household. Subsequent households were selected by picking the fifth household on the same route until ten household were selected.

Carers of young children in each of the selected households were interviewed about existence of active case finding and understanding how the program works. An in-depth interview guide was developed for this purpose. In addition, each team was given MUAC tapes in order to test whether informants recognised them, who use it and what for, reflecting an existence of active case finding within the community level. In order to determine knowledge on how the program works, carers were expected to mention the admission criteria, basically using the colours of the MUAC. Other questions regarding understanding of how the program works included knowledge on the the age criteria and exit criteria for both SC and OTP but this extra information was for gathering more evidence on the issue.

Hypothesis testing and verification

Lot Quality Assurance Sampling (LQAS) methodology was used to confirm or reject the hypothesis. The following formula was used to confirm the hypothesis;

$$d = \left\lceil n \times \frac{p}{100} \right\rceil$$

n=sample size

p = 50% -SPHERE standards for rural area

d=decision rule

Table 12: Hypothesis results- SQUEAC SCI March 2016

WARDS WITH OTP

WARD	VILLAGE	n	Active case finding	Decision rule	Understanding of program	Decision rule
------	---------	---	---------------------	---------------	--------------------------	---------------

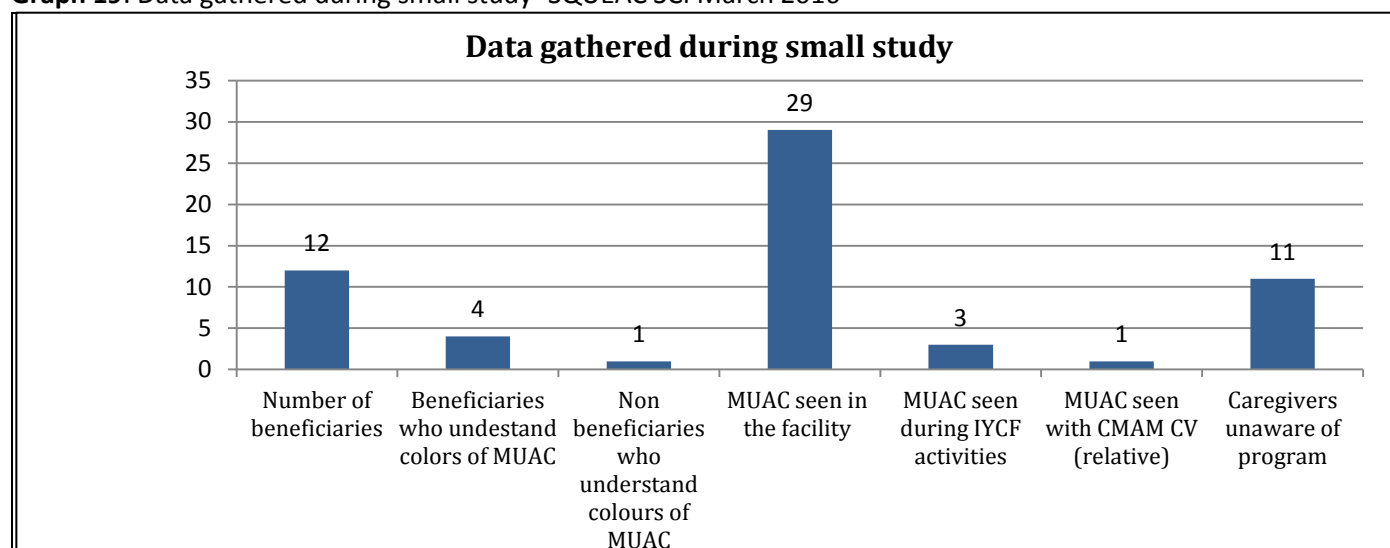
⁴ Source: en-net; Field exchange; Boosters, Barriers, Questions: an approach to organising and analysing SQUEAC data



Bakori B	Unguwar Dinya Kudu	10	0	d=25	Hypothesis confirmed	3	d=25	Hypothesis confirmed
Tsiga	Gidan Dan Audu	10	0			0		
Guga	Gidan Dari	10	0			2		
Jargaba	Markudi Yamma	10	0			0		
Kurami Yankwan	Rafin Kanya	10	0			0		
WARDS WITHOUT OTP								
BardeKwantakwaram	Rugar Mammi	10	0	d=25	Hypothesis confirmed	0	d=25	Hypothesis confirmed
Dawan Musa	Rugar Bahago	10	0			0		
Kabomo	Kofar Fada	10	0			0		
Kandarawa	Kandare	10	0			0		
Kakumi	Gidan Jaura	10	0			0		

The hypothesis was confirmed in wards with and without OTP. The caregivers who reported existence of active case finding and who knew the admission criteria using MUAC colors were less than the decision rule of 25. Information gathered from the interview guides administered to the 100 caregivers is presented in graph 19.

Graph 19: Data gathered during small study- SQUEAC SCI March 2016



Evidence from the small study was summarised as follows:

- Poor counselling with beneficiaries, who as a result are not aware of admission and exit criteria. This confirms insufficient information provided during admission as well as shallow health talks during OTP days.
- Weak community mobilization strategy was evident with no caregiver reporting to have seen CVs going round the villages searching for malnourished children. Lack of active case finding and community sensitization has resulted to lack of understanding how the program works especially the admission criteria whereby only one non beneficiary could understand the colors of the MUAC. 29 mothers reported to have seen the MUAC tape at the facility either during distributions or routine immunization sessions which confirm passive screening is happening.
- Caregivers unaware of the OTP program were from wards without OTP. This confirms that distance from the OTP site is a factor affecting access and uptake of CMAM services.
- Caregivers were not aware of Stabilization centre services. During stage 1, it was noted that SC and OTP are not well linked which resulted to low uptake of SC services.

In conclusion, it is very clear that lack of active case finding and understanding how the CMAM programs are some of the main setbacks of the performance of the CMAM program.



5. CONCLUSION & RECOMMENDATIONS

The SLEAC survey estimated coverage for SAM treatment in Katsina State at 39.0% (95% CI: 33% - 45%). This is below the SPHERE standards for rural areas of 50%. Coverage classification for Bakori LGA was low with Jibia and Mai'Adua LGAs with moderate coverage. However, the Chi Square test indicated that coverage was homogenous across the LGAs. The SQUEAC investigation and analysis unveiled the reasons for low coverage. Despite the good opinion about the program and constant supply of RUTF, poor coordination of CMAM activities by the stakeholders coupled with weak community mobilization component are the main setbacks to performance of CMAM program in Katsina State. The main goal of CMAM is to reduce morbidity and mortality associated with severe acute malnutrition. In order to remain relevant in meeting the needs of the community, it is essential for the stakeholders to invest more on quality programming.

Table 13 presents the action points proposed by the stakeholders. The action points should be implemented in all WINNN LGAs in Katsina State where applicable.

Table 13: Proposed action plans- SLEAC/SQUEAC WINNN March 2016

S/N	Strategy /Activities	Performance indicator	Target	Priority/When	Responsible (Focal Person or Agency)	Applicable Internal Resources	External resources needed	Applicable to
1	Strengthen LGA Nutrition Coordination meeting	# of Meeting minutes and attendance list	LGA Team	Monthly	PHC Team, DPHC lead	Refreshment		All LGAs
2	Intensify supportive supervision and on-the-job training to ensure adherence to protocol and improve quality of service	No. of completed checklist	OTP staff	Weekly	PHC Team	Sup. Checklist		All LGAs
3	Engage additional staff at the SC to address shortage of staff	No. of staff at the SC	Stabilization Centre	Daily/soon	DPHC	Staff salary		All LGAs
4	Sanitize and improve hygiene in the SC	No. of sanitation and cleaning carried out	Stabilization Centre	Weekly	NFP, LTA	Sanitary materials		Bakori and Jibia
5	Support provision of IEC materials for CMAM sites and CVs to improve knowledge and understanding by caregivers and the communities	No. of OTPs, SCs and CVs with CMAM IECs materials	CVs		LTA		CMAM material	IEC All LGAs
6	Provision of CMAM services to be part of daily routine of health workers and community volunteers. In this way, acute malnutrition is treated in the same way as any other childhood illness - it is diagnosed through normal consultation and treated through regular CMAM services at the health facility until resolved.	Number of monthly meetings conducted by the Director of health with health staff specifically for identifying CMAM issues (monthly reporting, supply issues, general feedback)	OTP staff	Quarterly	PHC Team			All LGAs
		Number of children seen during routine health checkups and nutritionally screened (MUAC/oedema) and admitted to the OTP or						



COVERAGE ASSESSMENT

» SEMI-QUANTITATIVE EVALUATION OF ACCESS & COVERAGE



referred to the SC and admitted during the same day

7	Sensitization meetings with CVs and community members to improve community knowledge and understanding	No. of Meeting minutes and attendance sheet	CVs and community members	Monthly	NFP, LTA	MUAC tapes	Posters/pamphlets	All LGAs
8	CV motivation	No. of souvenir distributed to CVs	CVs	Monthly	LTA	Venue, refreshment	Souvenir	All LGAs
9	Monitor and track community sensitization and mobilization activities by CVs including active case finding and referrals to OTPs	No. of completed checklist on community mobilization. No. of cases referred from the communities by CVs as reported by clients	CVs	Monthly	PHC Team, WFS, LTA	Vehicle		All LGAs
10	Provision of essential drugs	No of free drugs by category provided at OTPs and SCs	Clients	Weekly	PHC Team	Vehicle		Bakori and Jibia
11	Proper stock management of supplies and data tools to avoid stock-out and incidence of theft	No of stock outs of commodities and data tools reported	CMAM centres	Monthly	LTA		Data tools for CMAM centres	All LGAs
12	Improve linkages with OTPs and SCs	No. of OTP referred case that report at the SC due to follow-up	OTP/SC I/C, CVs	Weekly	OTP/SC I/Cs	Recharge cards to make follow-ups		All LGAs
14	Decongestion of OTP site to reduce pressure on human resources and reduce long time of stay by caregivers	No. of decongested sites	Clients		SCI	Technical staff		Bakori and Jibia



15	Engagement of WDCs to create awareness and ensure downward accountability	No. of Meetings with WDCs, OTP and SC in charges	Community members	Monthly	PHC lead by Dir	Team by PHC		Bakori
16	Sign-posting in OTPs with pictorials for easy direction and flow of activities to reduce time spent by clients in OTPs	No. of OTPs with sign-posting (with pictorials)	OTP Centre	Weekly	SCI		Sign post with pictorials	Bakori and Jibia

ANNEX 2: Participants for SLEAC survey training

	NAME	POSITION	Contacts
1.	AMINA LAWAL	NFP	07035525633
2.	BINTA IBRAHIM	NFP	08033580685
3.	SAADIYA HASSA	NFP	08024252411
4.	FATIMA IBRAHIM	ENUMERATOR	07036347834
5.	RAMATU BELLO	LTA	08066809317
6.	HAFSATI ZANGINA	ENUMERATOR	08036851210
7.	SAMIRA SALEH AMEEN	ENUMERATOR	08062744056
8.	HALIMA DAHURU	ENUMERATOR	08065532016
9.	HADIZAH SALEH	ENUMERATOR	08036601975
10.	AMINA YUSUF	ENUMERATOR	08066947664
11.	MARYAM IBRAHIM	ENUMERATOR	08035036615
12.	MAIKUDI SARATU	ENUMERATOR	07038968212
13.	SALISU SHARIF	ENUMERATOR	08068137745
14.	ABDULLAHI HALLIRU	ENUMERATOR	08036254892
15.	ZAHARADDEN LAWAL	ENUMERATOR	08032877804
16.	AHMED YAMEL	STATE REPRESENTATIVE	08126916953
17.	ZAYYANA ISYAKU SULE	STATE REPRESENTATIVE	08160646783
18.	AKILU MUAZU ABDULLAHI	STATE REPRESENTATIVE	08035826404
19.	ABDURRHMAN SABIU	ENUMERATOR	08068555955
20.	SULEIMAN KIRA	STATE REPRESENTATIVE	07064888441
21.	ZAINABU ALIYU	PROGRAM ASSISTANT	07035793837
22.	INYOGBA SALIU	LTA	08038141427

ANNEX 3: Enumerators for SQUEAC investigation

	NAME	POSITION	Contacts
1.	AKILU MUAZU ABDULLAHI	STATE REPRESENTATIVE	08035826404
2.	ZAHARADDEN LAWAL	ENUMERATOR	08032877804
3.	SAADIYA HASSA	NFP	08024252411
4.	SALISU SHARIF	ENUMERATOR	08068137745
5.	MARYAM IBRAHIM	ENUMERATOR	08035036615
6.	HAFSATI ZANGINA	ENUMERATOR	08036851210
7.	SAMIRA SALEH AMEEN	ENUMERATOR	08062744056
8.	AISHA MUSTAPHA	ENUMERATOR	07030070828
9.	SANI SHEHU	ENUMERATOR	08066005685

ANNEX 4: SLEAC sampled villages

LGA	Village	SAM Cases	Cases covered	Recovering cases
Bakori	Gidan Makera	1	0	0
Bakori	Rugar Bammi	0	0	1
Bakori	Gobirawa	2	1	1
Bakori	Kanawa	2	0	0
Bakori	Gida Z. Marke	1	0	0
Bakori	Gidan malam	0	0	0
Bakori	Gidan Siliau	0	0	0
Bakori	Yar Gauta	0	0	0
Bakori	Gidan Wula	0	0	0
Bakori	Rugar Katu	1	0	0
Bakori	Dan Baushe	2	0	0
Bakori	Gidan Hassan	1	0	0
Bakori	Layin Kuka	2	0	0
Bakori	Tarmake	0	0	0
Bakori	Ganjar Arewa	0	0	0
Bakori	LayijnAlmajirai	0	0	0
Bakori	Gidan Baushe Kabomo	0	0	0
Bakori	Jargaba Arewa	0	0	0
Bakori	Rinji	2	1	0
Bakori	Lamido	2	0	0
Bakori	Gidan Liti	2	0	0
Bakori	G/Kaji Rugage	6	0	0
Bakori	Ungar sanyi	2	0	0
Bakori	Zangon Marke	4	3	0



Bakori	Katoge	4	0	0
Bakori	Gidan Dan Kawu	1	0	0
Bakori	Unguar Gwammai	2	1	0
Bakori	Kundurawa	2	0	0
Bakori	Sabuar Abuja low cost	0	0	0
Bakori	Gidan Na Mashi	0	0	0
Bakori	Gidan Dutse	1	1	0
Bakori	Yar Yara Layin Na Koya	0	0	0
Bakori	Tamarke Layin Alhaji Dayyabu	0	0	0
Bakori	Gidan Alhaji Bello Gabas	0	0	0
Bakori	Gidan Gambon Kallo	0	0	0
Bakori	Danliti Yamma	0	0	0
Bakori	Rugar Haruna	0	0	0
Bakori	Gidan Buzu	0	0	0
Jibia	Tantagarye	2	0	2
jibia	Tahyau	5	4	2
Jibia	YAN NONO	1	0	2
Jibia	Japan	1	0	1
Jibia	Sabaru	5	3	3
Jibia	Dan Tambara	3	1	0
Jibia	Kwarago	2	0	4
Jibia	Gurbon Magarya	17	6	5
Jibia	Lambar Mandu	9	0	4
Jibia	Garin M wuya	5	1	3
MaiAdua	Gwadabe	0	0	0
MaiAdua	Danyare	4	3	3
MaiAdua	Dawakana	3	0	0
MaiAdua	Badole	1	0	0
MaiAdua	Yerogel	2	1	1
MaiAdua	Marfaru	8	0	0
MaiAdua	Madugu	7	4	2
MaiAdua	Maiturmi	7	0	1
MaiAdua	Dimorkul	6	5	5
MaiAdua	Jimfere	4	2	3
MaiAdua	Gwadabe	0	0	0
MaiAdua	Danyashe	0	0	0



ANNEX 5: Questionnaire for Wide area survey

SQUEAC

COVER
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 | |

[Abbr. COUNTRY] [Health district] [Date]

1



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. Whe ☐	a2. Why? _____
☐ b. Discharged as cured	b1. Wh ☐	_____
☐ c. Discharged but not cured	c1. W ☐	c2. Why? _____
☐ d. Other reason, please specify: _____		

ANNEX 6: Interview guide for small study

Respondent: _____

Ward: _____ Village _____ Date _____

1. Do you know where malnutrition can be treated/ are you aware of a program which treats malnutrition? Tell me the commodities offered and the age group targeted by the programs
2. Has any of your children been admitted into the program?
3. Show the MUAC tape and probe if they have seen it.
4. Where did you see it and with who.
5. When did you see it (MUAC) and what was it being used for?
6. Are there people in this village who use this (MUAC) on your children?
7. If yes, how often do they come to the village?
8. Tell me the meaning of the colors of the MUAC

ⁱ Lower confidence interval