



WAJIR NORTH SUB COUNTY, WAJIR COUNTY, KENYA DECEMBER 2017,









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ACRONORMS:

CHVs CNC	Community Health Volunteers County nutrition coordinator
CHWs	Community Health workers
CU	Community units
SCNO	Sub County Nutrition Officer
H/W	Health worker
HINI	High Impact Nutrition Interventions
IMAM	Integrated Management of Acute Malnutrition
IYCN	Infant and Young Child Nutrition
KRCS	Kenya Red Cross Society
LQAS	Lot Quality Assurance Sampling
MAM	Moderate Acute Malnutrition
MIYCN	Maternal Infant and Young Child Nutrition
MOH	Ministry of health
MTMSG	Mother-To-Mother Support Group
MUAC	Mid upper arm circumference
NDMA	National Drought Management Authority
ОЈТ	On job Training
OTP	Outpatient Therapeutic Program
RUSF	Ready to Use Supplementary Food
RUTF	Ready to use Therapeutic food
SAM	Severe acute malnutrition
SCHMT	Sub County Health Management Team

EXCUTIVE SUMMARY

Wajir North Sub-County was curved from the greater Wajir District (now Wajir County) in North Eastern Province in November 2007. The Sub-County borders Ethiopia Republic to the North, Mandera County to North East, Wajir East Sub-County to South East, Eldas Sub-County to the South and Marsabit County to the West. The Sub-County consists of three administrative divisions, namely; Buna, Bute and Gurar and 20 locations. The Sub-County covers an area of 10,958 square kilometres and has an estimated population of 174609 persons according to 2009 population census with an annual growth rate of 3.7% and a population density of 12 per square kilometre. It is predominantly inhabited by Somalis whose main lifestyle is nomadic pastoralism with some practicing agro-pastoralism Semi-Quantitative Evaluation of Access and Coverage (SQUEAC) methodology was adopted to assess Wajir North coverage with main objective being to establish overall OTP and SFP coverage as well as barriers influencing OTP. The assessment aimed at; identifying boosters and barriers influencing OTP coverage, establishing a HEADLINE coverage estimate for OTP, capacity building Wajir north MOH programme staffs in carrying out SQUAEC assessment and finally providing recommendations and action plan based on identified barriers to programme coverage

The SQUEAC methodology adopted a three stage approach; Stage I: Establishment of areas of low & high coverage as well as reasons for coverage failure using routine program data as well as qualitative data; Stage 2: Confirmation of the location of areas of high and low coverage and the reasons for coverage failure identified in Stage I using small studies, small surveys, and small-area surveys; Stage 3: Wide area survey to provide an estimate of overall program coverage using Bayesian techniques.

The coverage assessment established an overall coverage for Wajir North Sub-County to be 59.1% (47.7% - 68.2 %) and 47.3% (34.9% - 60.2%) for OTP and SFP respectively. The OTP coverage is above the recommended SPHERE standards for rural setup of 50% while SFP was slightly lower than 50%. The good coverage is attributed to boosters like good program awareness, committed CHVs who work without receiving monthly incentives, awareness on malnutrition and its causes, appreciation of the IMAM by the community and good linkage between the community and the health facility.

The assessment also revealed some main barriers like nomadism/migration of caregivers in search of pasture & water especially during the drought season, severe shortage of MOH health workers, insecurity/clan clashes, distance to the health facility where beneficiaries have to walk long distance, stock out of commodities, lack of outreach activities among others.

Based on the finding of the assessment, the team recommended Collaboration of communities to develop mechanism and strengthen existing structures on treatment of acute malnutrition (ICCM and CHUs) using community resources e.g storage facilities and safety of commodities through establishment of community commodity safety committee, integration and strengthening defaulter tracing system with system which will reduce defaulters and improve coverage, carrying out periodic mass screening, strengthening the facilities to ensure systematic screening and growth monitoring are enforced, creating awareness and sensitization of communities on RUTF as a therapeutic feed and discourage sharing of commodities as well as periodic monitoring at household with IMAM cases to ensure no sharing of RUSF and RUTF.

Other recommendations to the ministry of health were rregular support supervision, data quality audit to help improve quality of service as well as data reported by the facilities which will improve coverage. This will also enhance capacity to follow best practices as it gives chance for experience and expertise sharing. On job and classroom training for both CHVs and programs staffs are also highly recommended.

I.0 INTRODUCTION

I.I Context Background

Wajir North Sub-County borders Ethiopia Republic to the North, Mandera County to North East, Wajir East Sub-County to South East, Eldas Sub-County to the South and Marsabit County to the West. The Sub-County consists of three administrative divisions, namely; Buna, Bute and Gurar and 20 locations. Bute town is the district headquarters of Wajir North and approximately 247 km from Wajir town. The Sub-County covers an area of 10,958 square kilometres and has an estimated population of 174609 persons according to 2009 population census with an annual growth rate of 3.7% and a population density of 12 per square kilometre. The sub county is predominantly inhabited by Somalis whose main lifestyle is nomadic pastoralism with some practicing agro-pastoralism

Wajir North Sub-County is divided into three main livelihood zones; Agro-pastoral in the Northern farmed hills, Pastoral all species in the western grassland and Employment/Small business/casual labour in different parts of the districts.

Save the children has been operational in Wajir North Sub-County since 2015, where it has been implementing Health and Nutrition among other projects. In collaboration with other partners (WFP, UNICEF, ALDEF, SCI WASDA). Save the Children is currently strengthening the health system in delivery of HINI, capacity development, coordination, surveillance and monitoring systems as well as advocacy. IMAM program which is a component of HiNi comprises of Community Mobilization, Stabilization Centre (SC) at Bute District Hospital for management of severely acutely malnourished under-fives with medical complications, 32 Outpatient Therapeutic Program (OTP) for management of severely acutely malnourished under-fives with no medical complications and Supplementary Feeding Program (SFP) for management of moderately malnourished under-fives & pregnant and lactating women. This includes both health facilities and outreach sites.

SCI has also supported the department in the establishments and training of 10 community units, conduct monthly men Barraza, training of health workers on Bemoc and establishment of 6 MTMSG and overall objectives of the mentioned activities are to reduce maternal and child morbidity and mortality.

2.0 COVERAGE ASSESSMENT OBJECTIVES

2.1 General objective

To establish overall OTP and SFP coverage for Wajir North sub county as well as barriers and boosters influencing OTP and SFP coverage.

2.2 Specific objective

The specific objectives for the coverage assessment were;

- To determine OTP and SFP program coverage and establish the head line coverage estimates in Wajir north
- To determine and show barriers and boosters for OTP and SFP coverage in the sub county.
- To provide recommendations and possible solutions to improve coverage
- To capacity build ministry of health and SCI program staff on the SQUEAC methodology.

2.3 Over view of the area

Wajir North is one of the six sub counties of Wajir County. The Sub-County borders Ethiopia Republic to the North, Mandera County to North East, Wajir East Sub-County to South East, Eldas Sub-County to the South and Marsabit County to the West. The sub county is predominantly in habited by Somalis, it is majorly semi-arid with harsh climatic conditions. The sub county receives 200- 400mm of rain fall per year.

2.3.1 Population descriptions

Wajir north sub county has a total population of 174609 persons according to 2009 population census with an annual growth rate of 3.7% and a population density of 12 per square kilometre. Population 6-59 months stands at 11.65% of the total population which translate to 20341.

2.3.2 Area Map

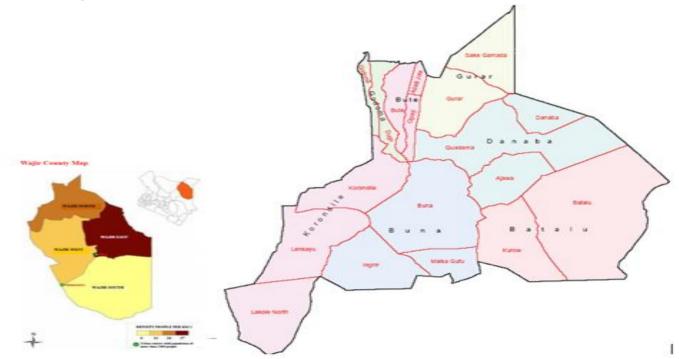


Figure 1: Area Map

3.0 STAGE I: QUALITATIVE AND QUANTITATIVE DATA ANALYSIS

The main objective of this stage was to identify probable areas of low and high coverage as well as reasons for coverage failure. This was done using the routine programme data analysis which included the admissions, exits (defaulters, non-responses, cured and in-program deaths), Mid-Upper Arm Circumference (MUAC) on admission, length of stay and the physical address (villages) of the beneficiaries. In addition, qualitative and quantitative data collected from the community and the health facilities was also collected with the basic aim of triangulating the information of IMAM program.

3.1 Quantitative Data

In this category the quantitative data which was used was the routine program data which was collected from all the facilities in Wajir North which offer the IMAM services. In precise, the data collected included the MUAC on admission, the number of admission by month for twelve months preceding the assessment, length of stay, exit data (in-program death, defaulters, and non-responses) for the twelve months preceding the assessment. In addition, the physical location of the beneficiaries was mapped to give a spatial distribution of the beneficiaries.

3.1.1 Out-patient therapeutic program admission trends

Further, the SFP admissions were plotted against the calendar of events. The admissions are plotted from Oct 2016 to September 2017. The trend line is shown in the figure below

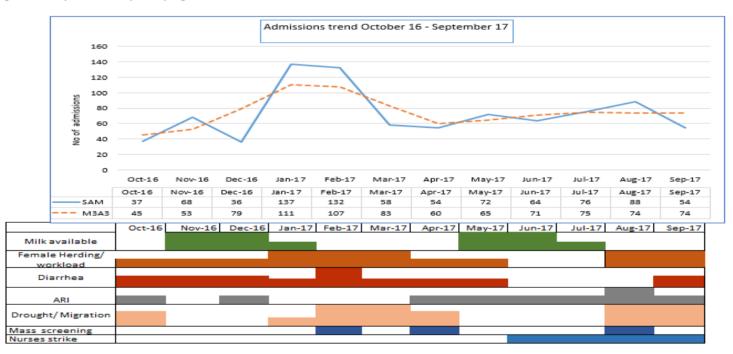


Figure 2: Out-patient therapeutic program admission trends

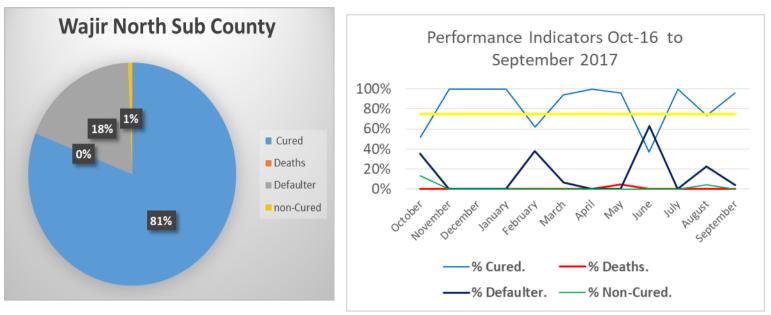
The table above shows two trend lines where the blue line represents the raw data and the red-dotted line represents the smoothened trend using a moving average of span 3. According to the figure, there was low admission from October 2016 to December 2016 this was attributed to migration, milk availability and shortage of staff (majority of health workers take leave in December) from January 2017 through to February 2017 there was increase in admission which was attributed to migration, upsurge in diarrheal disease, mass screening .There was noted decline in trends of admission in March through to September which was also attributed to milk availability, nurses strike as per the calendar of event. The nurses strike majorly affected Bute and Buna sub county referral hospitals. Further analysis also shows good

reporting rate of above 80% from October 2016 to March 2017 with lowest reporting rate in April 2017. The table below shows OTP indicator performance per facility.

Figure 4: Performance Indicator by Month

3.1.2 OTP Indicator Performance

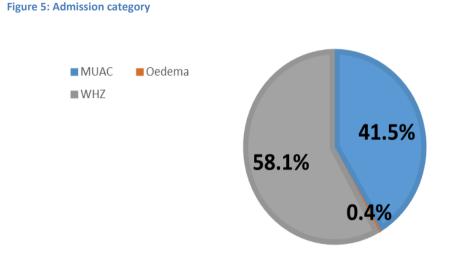




Overall performance for the sub county was good with all indicators within the SPHERE standards. Cure rate of 81 % is above the 75% Sphere recommendations. However, in the months of October 2016, February, June and August 2017, cure rate was less than 75%. This was contributed by three facilities namely: Danab, Dugow and Korondile with high defaulter rate in the said months. The reason for defaulting was due to distance, population migration from neighboring Ethiopia that cannot be traced and frequent stock out which comes due to logistical challenges for redistribution making the facility sometime stay long without stock.

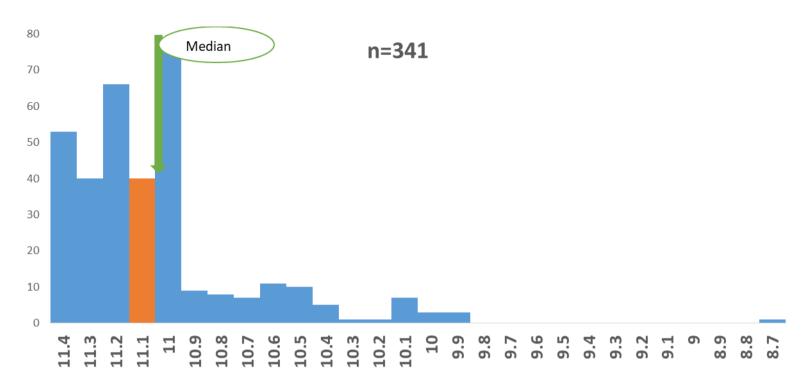
3.1.3 OTP Admission category

The highest category of admission in Wajir North was WHZ which takes **58.1%**, closely followed by MUAC which takes **41.5%** of the total admission while oedema take least admission category of **0.4%**.



3.1.4 OTP MUAC at Admission

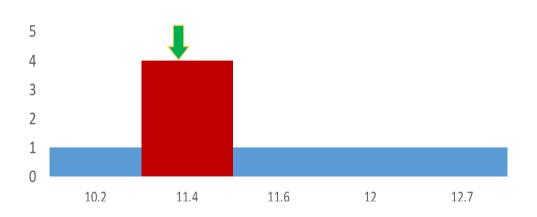
Figure 6: MUAC AT ADMISSION



The above figure shows that there was early identification, in the OTP program with relatively few cases being admitted with a low MUAC. Early admission in a program is an indicator of a program that is able to capture cases early enough and hence a good performing. However, some children are identified late, children with a MUAC less than 10.5 CM might have poor program outcome. This was contributed by poor health seeking behaviour, high maternal workload and distance to health facility.

3.1.5 OTP MUAC at Defaults

Figure 7: MUAC at default

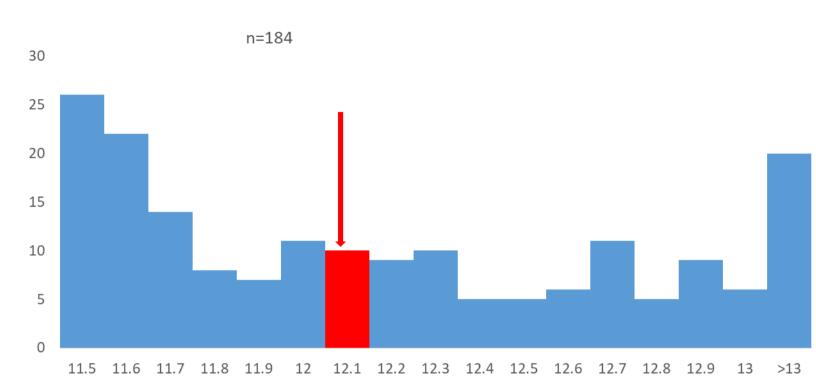


Children default with a median MUAC of 11.4, when they have not been cured. However, there are some who stay beyond the discharge criteria (>11.5 Cm) in the OTP program.

Some children meet both WHZ and MUAC admission criteria, thus some may have high MUAC but WHZ is still <-3SD Figure 6 MUAC at discharge

3.1.6 OTP MUAC at Discharge

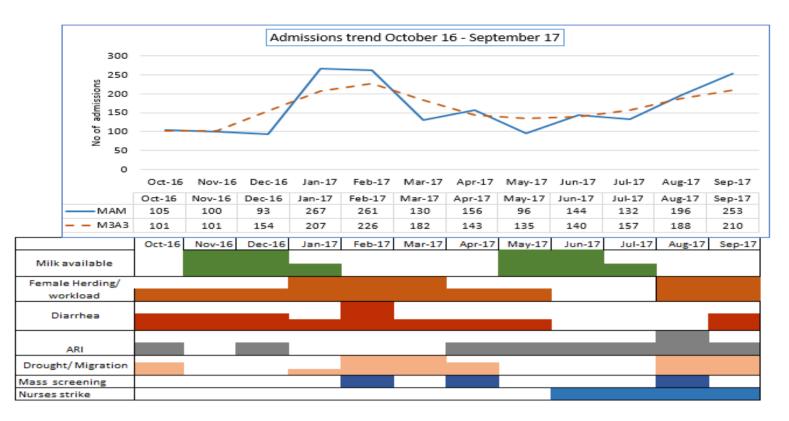
Figure 8: MUAC at discharge



The OTP median MUAC at discharge is 121mm which is fairly good as most children are discharged following Kenya IMAM guideline though still bulk of the children stay long in the program of more 13weeks, which contribute to long length of stay in the program even after the child attained the creteria for discharge.

3.1.7 SFP Admission Trends

Figure 9: SFP admission trends

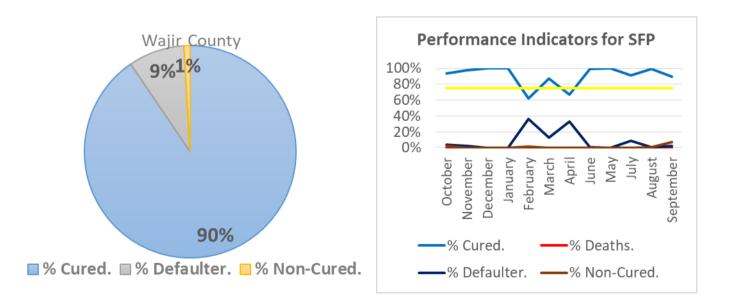


Admission trends was plotted against calendar of events. The admission trend increased between January and March, this was attributed to the drought and in migration, mothers' /care givers busy in herding and increase in cases of diarrhoea. In the subsequent months', the admission decreased until August and September where sharp increase was noted which was largely due to mass screening in August.



Figure 10: SFP indicator performance

Figure 11: SFP Performance Indicators by Months

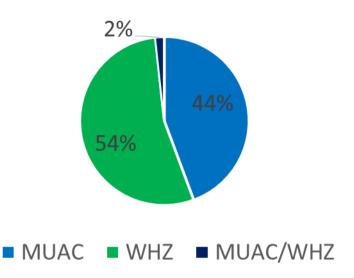


SFP Overall performance for the period under investigation is good with all indicators within SPHERE standard. 90% and 9% cure rate and defaulter rate respectively. However, High defaulter rate was reported for the months of February and

April 2017 which was largely contributed by Dugow, Godoma and Ingriri health Centre. This was attributed to out migration and beneficiaries from Ethiopia

3.1.9 Admission category for SFP

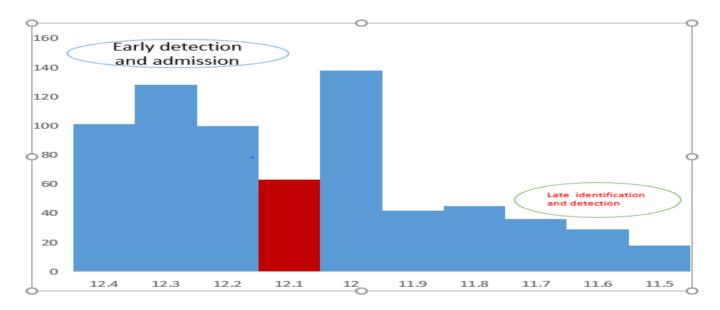




According to the figure above the highest admission category was WHZ which transalate to 54% of the total admission with the lowest being MUAC/WHZ which transalte to 2% of the total admission.

3.1.10 SFP MUAC at Admission

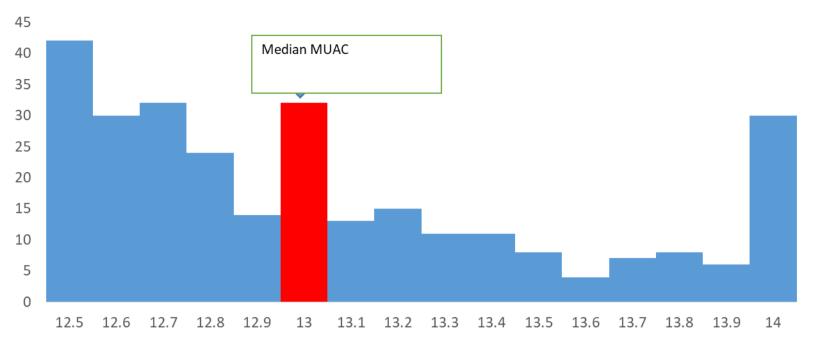
Figure 13: MUAC at admission



The distribution or spread of the histogram indicates that the MUAC on admission were mostly between a MUAC of 124mm down to 119mm with a meadian muac of 12.1 which indicates early case detection os moderately malnutrition which was due to good health seeking behaviour of the community. However a good number of beneficieries were identified late with muac of 115mm, this was atributed to lack of systematic screening.

3.1.11 SFP MUAC at Discharge and Length of stay

Figure 14: MUAC at discharge



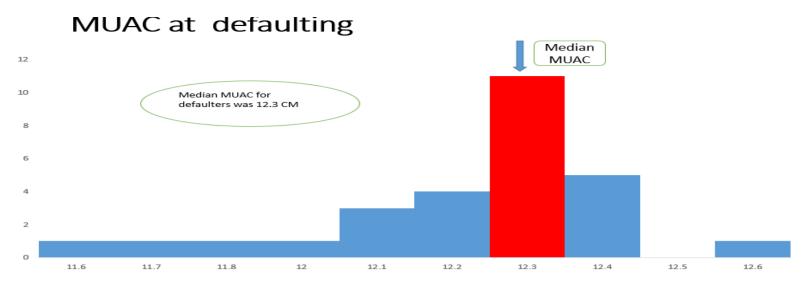
First ,the distribution or spread of the histogram show that most beneficieries were discharged with a MUAC of between 125 and 132mm and with meadian MUAC of 13 which indicate that benefiacieries were discharge as per protocal. However, a good number are discharged with MUAC of 140mm which indicate long length of stay in the program. Median length of stay was obseerved to be 13 weeks (figure below). There were many children who stayed for long more than 13 weeks.

Wajir North Median LOS = 13 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28

Figure 15: SFP Median Length of Stay

3.1.12 SFP MUAC at Default

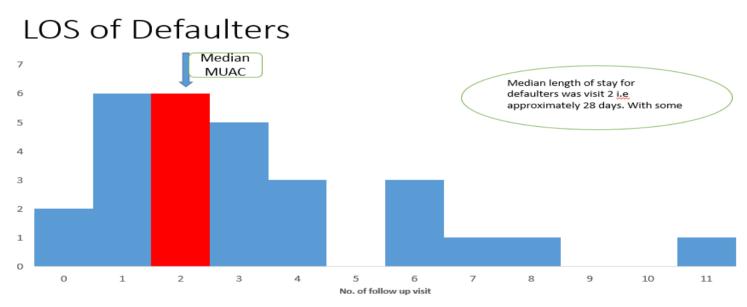
Figure 16: MUAC at default



The histogram above shows that most beneficiaries default with MUAC between 121mm to 124mm with a median MUAC of 123mm which indicate that most beneficiaries default when they are almost recovering, though some default with MUAC of 116mm and are likely to fall back to severe malnutrition. Defaulting was attributed to high maternal workload especially when the trekking distance to water source increases, migration, and beneficiaries from Ethiopia



Figure 17: Length of Stay before Default



The histogram above shows most of the beneficiaries' default between 1st and 4th visit with a median LOS of second follow-up though others default immediately after admission and stay as long as 11th follow-up visit. This was attributed to mothers being busy due to long trekking distance to water source, and migration.

2.2 Qualitative data collection

The qualitative data was collected through various methods and from different sources as shown in figure 14 below. The importance of this was to enable the finding to be triangulated by source and also by method. Among the sources of information for the qualitative data were OTP beneficiaries, community members (both males and female), community opinion leaders who included the local administrators, spiritual leaders, traditional healers and traditional birth attendants (TBA). In addition, health staffs and community health workers were also targeted as sources of qualitative data.

Several methods were used to collect the data; this includes: focused group discussions (FGD), key informants interview, observations, data analysis and structured interviews

3.2.1 Qualitative data source

Figure 14 qualitative data source and methods

Table 1: Qualitative Sources and Methods of data collection

Qualitative sources and Methods						
Source	Code	Method	Code			
Community leader- chief	1	Structured interview	А			
Mother to mother support group	2	Focused group discussion	В			
Mother with OTP defaulter	3	Observation	С			
Community lay women	4	Data analysis	D			
Traditional healer	5					
CHV	6					
Community unit CHVs	7					
Community lay men	8					
IMAM (SC/OTP/SFP) staff	9					
Religious leader	11					
Administration – DO	12					
OTP mother	13					
ТВА	14					
SQUEAC team	15					
Program data	16					
SCHMT	17					
SCI staff	18					

Qualitative data was collected on different aspects of the program as they relate to its outcome and performance. These aspects included;

- Understanding of malnutrition (Causes, signs)
- Health seeking behavior (Prevention and treatment of malnutrition)
- Knowledge on the existence of treatment
- Appreciation of the service
- Quality of the care
- Activity of Community Volunteers
- Barriers to access / reason for defaulters
- Perception of coverage (availability, accessibility)

The qualitative information was then organized using the Boosters, Barriers and Questions (BBQ) approach. This approach helped identify the program boosters and barriers and thereafter determining questions and areas which required further investigations. After identifying the questions which required further investigations, the teams would go to the field to investigate more in order to find the answers to the questions identified by the BBQ approach. The figure bellow show barriers and boosters for OTP and SFP.

3.2.2 OTP boosters by source and methods

Table 2: OTP boosters by source and method

OTP BOOSTER	SOURCE	METHOD
1. Good health seeking Behavior	3	Α
2. RUTF seen as medicine	1	Α
3. Awareness of the program	8,3,16	B',A,D
4. Awareness of the treatment protocol	3	Α
5. Committed CHVs	6‴,5,14	A'''
6. Active case finding	6",3	A''
7. Systematic screening (Daily)	9,18	Α'
8. Availability of commodities	2,13,9	B,A'
9. Functional SC	18	Α
10. not stigma	6,2	A,B
11. Access of OTP services	1,18	Α
12. Good linkage between facility and the community	6,8.3,9	A‴,B
13. Appreciation of the service	8,6',1,2',13,9	B',A''''
14. Use of available tools MOH 100	6	A,C
15. Proper documentation of OTP register	15	С
16. Capacity of the H/W	16,9	D,A
17. Outreach services available	6, 18	A,C
18. Community mobilization	6	Α
19. Defaulter tracing mechanism	6,9′	Α''
20. Good Staff attitude	4	В

3.2.3 SFP boosters by source and methods

Table 3: SFP Boosters

SFP Booster	source	method
1.active case finding	6	A
2.systematic screening	9	A
3.committed CHV	6,5,14	A
4. good linkage between facility and community	6, 8,3,9	A
5. community mobilization	6	A'',B
6. awareness of sfp program	8	С
7. not stigma	8	A,C
8. Plumpysup (RUSF) seen as medical supply	1,9	A
9. availability of sfp service	1, 9	A
10. outreach service	6	A''
11.ease of access	8	B''',A'
12. Appreciation of service	8,1,2,13,9	В
13. Capacity to provide quality service from health staff	9, 18	А
14.training of staffs on imam	9,18	A
15.availability of sfp commodities	2,13,9	B,A'
16. availability of tools	8	A,B
17. proper documentation of registres	6	A
18. good defaulter tracing mechanism	6,9	Α'
19. good health seeking behaviour	7	В

3.2.4 OTP barriers by source and methods

Table 4: OTP Barriers by Sources and Methods

OTP BARRIER	SOURCE	METHOD
1. Inactive/ dormant MTMSG	9	А
2. Poor community sensitization on the program	1,2	A,B
3. Poor health seeking behaviour	8	В
4. Competing priority from the caregiver	3	А
5. Sharing of OTP commodities	13,6	В
6. Poor community sensitization	1,2	A,B
7. Limited regular meeting between Staff/CHVs/ CU	9,6,18	A'
8. Low involvement of community leaders in planning, dissemination of nutrition	1,14	A''
activities		
9. Weak mechanisms of giving feedback	1,6	A'
10. Inadequate knowledge of OTP treatment protocol	13,6	В
11. Inadequate knowledge on malnutrition	6	A
12. Nutrition Commodities seen as food	4	В
13. Facility not operational	6,9, 18	А
14. Staff turnover in the county	18	А
15. Long distance	2,13,6",3	B'.A'',D
16. Insecurity. I.e. clan conflicts	18	А
17. Lack of incentive/motivation for CHV	9,6"	A'''
18. High CHV workload at the facility	9'6	А
19. Stock out of RUTF commodity	13,4,6,16	B,A,D
20. Shortage of qualified staffs	6,16	A,D
21. Weak active case finding	9	А
22. Weak referral and follow-up	3,9	А
23. Weak systematic screening at the facility level	18	А

3.2.5 SFP barriers by Source and Methods

Table 5: SFP Barriers by Sources and

FP BARRIERS	SOURCE	METHOD
not active case finding at the community level.	9	A
Inactive mtmsgs	9	A
poor community sensitization	1,2	A,B
not regular meetings between staff and community	9,6	Α'
onot involvement of community leaders in planning and dissemination on nutrition service	1,14	A'
not mechanism of giving feedback	1,6	Α'
knotwledge gap on malnutrition	14	A
S.sharing of SFP commodities	13,6	B,A
long distance to sfp sites in some villages	2'',13,6,3	B', A'''
0.migration (Out-mogration leading to defaulting)	2	В
1.Some facilities nott operational ie newly built watiti	6	A
2.Poor health seeking behaviour	8	В
3.not incentives and motivations to CHVs	9,6''	A'''
4.Shortage of staff	6	A
5.stockout of SFP commodities	13,6	B,A
6. High CHV workload at the community level	9,6	A'
7. Sale of RUSF (RUSF readily available in the market)	1,2	A,B
8.notn adherence to treatment protocol.	15	C

4.0 STAGE 2: HYPOTHESIS FORMULATION AND TESTING

4.1 Hypothesis testing

The goal of stage 2 is to test hypothesis of spatial distribution of coverage and also to test homogeneity and heterogeneity of coverage in the surveyed area. These hypotheses usually take the form of identifying areas where the combined data suggest that coverage is likely to be either high or low. The small-area survey method was used to test the hypothesis of distance as a barrier to the accessibility of IMAM services.

There was elative homogeneity in barriers and boosters reported by various respondents across the facilities. The team developed the following two hypotheses on probable areas of high and low coverage based on qualitative and quantitative data;

I. There is high coverage in areas near facilities or health outreaches (<5Kms) and low in areas far from the facilities

2. There is high coverage in areas with active community units (CU) and low coverage in areas with inactive/no community units

Rationale: The long distance between the village and the HF was identified as a reason for the drop out of the programme and lack of active case findings in areas with inactive CU.

Two villages were selected for each of the hypothesized statement and Data collected during the small area surveys was analyzed using simplified lot quality assurance sampling (LQAS). The LQAS classification technique analyses data using the following formula.

4.2 LQAS formula

$$d = \left\lfloor n \times \frac{p}{100} \right\rfloor \text{ (round down)}$$

Where:

- d = threshold value
- n = sample size
- p = standard set

If the number of covered cases found (that is, those cases in the program) is greater than the coverage of the surveyed area is classified as being greater than or equal to the coverage standard.

If the number of covered cases found (that is, those cases in the program) is less than the coverage of the surveyed area is classified as being less than or equal to the coverage standard

The result of small area survey was as shown below.

4.3 Result of small area survey

The result of the small area survey is as presented in the figure below

Figure I result of small area survey

	-	1	1 .			1				1
~			SAM/OTP				MAM/SFP			
Hypothesis	Health facility	Village	Covered	Not covered	Recovering	Hypothesis result	Covered	Not covered	Recovering	Hypothesis result
		H	Hypothesis: Vil	lages far from l	health facility (I	more than 5 KM) hav	ve low coverag	e		
far from facility	Korondille	Kobole	0	0	0		0	1	0	
far from facility	Gurar	Balatul Amin	0	0	0]	0	4	0	
Total			0	0	0	N/A	0	5	0	Hypothesis validated
6 alu		_	_					_	_	
near facility	Korondille	Garas	0	0	1	-	0	3	2	-
ear facility	Beramo	Beramo A	o	0	0	Hypothesis	5	0	2	
Total			0	0	1	validated	5	3	4	Hypothesis validated
			Hypot	thesis: Health f	acility with act	tive CU have high cov	verage			
Active cu	Gurar	Qosho	2	1	0		3	4	1	
Active cu	Danaba	Baslako	0	2	0	Confirmed	2	2	5	Hypothesis is validated
Total			2	3	0		5	6	6	
			Hypot	hesis: Health fa	cility with ina	ctive CU have low co	verage			
nactive cu	Ogorji	Ogorji	0	0	2	u de la companya de l	3	1	1	
inactive cu	Qudama	Qudama	0	0	1	Hypothesis not validated	1	0	0	Hypothesis not validate
Total			0	o	3		4	1	1	

Lack of SAM cases in most of the facilities was a limitation. However, the hypothesis of high coverage in areas with active community units and low coverage in areas with inactive/no community units was validated in one active CU and not validated in another one (CU has less or no major impact on IMAM coverage).

In SFP the hypothesis of Distance as barrier was validated in all villages except in Garas (Near facility with 3 non-covered cases. For CUs, none of the hypothesized statement was validated with some of inactive CUs having more covered cases compared to non-covered (Ogorji and Qudama)

4.4 DEVELOPING A PRIOR

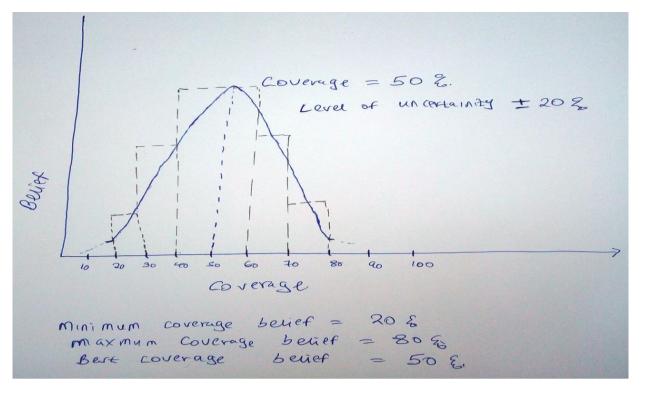
Prior was developed using Bayesian techniques' foundation, that is what we know about programme coverage (our knowledge and belief of what it actually likely to be), this belief is presented in four methods. Which includes.

4.4.1 Histogram

Based on the qualitative, quantitative data in stage I and data collected in small area survey histogram was developed for both MAM and SAM program. The team developed the histogram prior based on the belief of where the coverage stands best. The minimum coverage was believed to be at 20% and highest coverage at 80%. The best probable coverage for both OTP and SFP was plotted at 50% as shown in the figure below.

OTP/ SFP histogram =50%

Figure 18: Coverage Belief



4.4.2 BBQ simple

Assuming all the barriers and boosters have the same weight and will influence coverage the same magnitude simple BBQ was calculated for both SFP and OTP. The results were calculated as follow:

а.	BBQ Simple SFP = {(0+20) +(100-23)}/2=48.5
b.	BBQ Simple OTP= {(0+19) +(100-18)}/2= 50.5

4.4.3 BBQ Weighted

Since all the barriers and boosters has no equal influence on the coverage, weight was given to each and every barrier and booster in scale of I to 5 depending on the number of time triangulated, which was calculated as follows:

- a. BBQ Weight OTP = $\{(0+57) + (100-62)\}/2=51.5$
- b. BBQ Weight SFP = $\{(0+53) + (100-45)\}/2 = 54\%$

Bayes prior calculator was used to calculate prior for both OTP and SFP with a precision of 12%.

4.4.4 AVERAGE PRIOR MODE

Figure 2 average prior mode for both SFP and OTP

Figure 19: OTP and SFP Prior

Average priopMode

OTP

- Unweighted={(0 + 20) + (100 − 23)}/2=48.5
- $Weighted = \{(0 + 57) + (100 62)\}/2=51.5$
- Histogram prior = 50%

Average Prior Mode= 50

Alpha : 15.6; Beta: 15.6

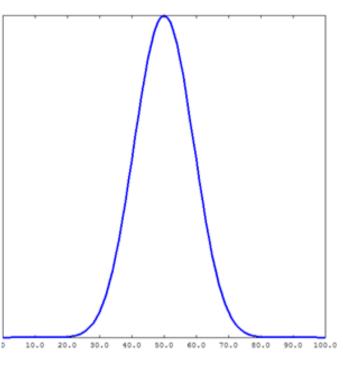
SFP

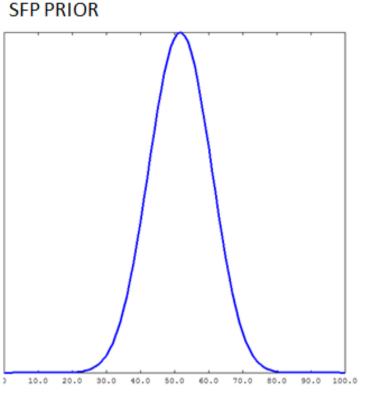
- Unweighted= $\{(0 + 19) + (100 18)\}/2= 50.5$
- Weighted = $\{(0 + 53) + (100 45)\}/2 = 54\%$
- Histogram prior = 50%

Average Prior Mode= 51.5

Alpha : 16.1; Beta: 15.1

OTP PRIOR





4.5 Sample Size Calculation SAM prévalence 0.4% (MUAC) MAM prévalences 4.5 % (MUAC)

Sample size calculation

The sample size was calculated first by getting required cases (n), then villages using the two formulas below

 $n_{\textit{Likelihood}} = \left[\frac{\textit{mode} \times (1 - \textit{mode})}{(\textit{precision} \div 1.96)^2} - (\alpha_{\textit{Prior}} + \beta_{\textit{Prior}} - 2)\right] \quad n_{\textit{slages}} = \left[\frac{n}{a_{\textit{stages}} \times \frac{percentage}{n} \times \frac{percenta$

Average village population of 2268 people per household, Under fives (6-59) percentage of 11.65% and precision of 12% were used

- Number of SAM cases = 37
- SAM Prevalence = 0.4%
- Villages sampled = 35.48 (approx. 36)
- Method used to sample: CSAS (Quadrat and systematic sampling of villages)

5.0 STAGE 3: WIDE AREA SURVEY

5.1 Posterior and Likely Hood

A wide-area "likelihood survey" was conducted in 36 villages to calculate the coverage estimate.

The active and adaptive case-finding methodology was used to identify the SAM cases and house to house for MAM cases.

The case definition used for coverage survey was defined as "a child matching the admission criteria of the programme". The admission criteria of the Kenyan IMAM programme are children aged between 6 and 59 months with at least one of the following criteria: 1) a MUAC of <115 mm / or 3) bilateral pitting Oedema for SAM and 114 mm> to <124mm for MAM

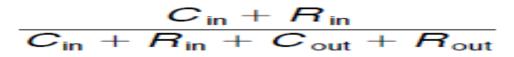
The sample size required was calculated by using the Bayes calculator and 35 SAM cases were to be identified using Stratified sampling to systematically select villages from a list of villages (72) out of possible 78 villages. Due to insecurity in some area, 6 villages were not accessible. The sampling interval applied in our case was 2, a total of 36 villages were selected with a sampling interval of 2. Same villages were used to identify MAM cases that had a target of 3 villages.

5.2.0 Coverage Estimation

5.2.0 Posterior Calculation

Two methods were used to calculate the posterior and they include: Single coverage estimate and effectiveness of early detection method. Single coverage estimate calculation was found to be appropriate to calculate the coverage as it's an estimator of coverage that does include both recovering cases that are in the program and recovering cases that are not in the program and, thus, provides an unbiased estimator of overall program performance:

5.3.1 Calculation of the posterior for MAM using the single coverage estimator



Number

villages=

and 36

respectively

MAM

SAM

of

3

for

and

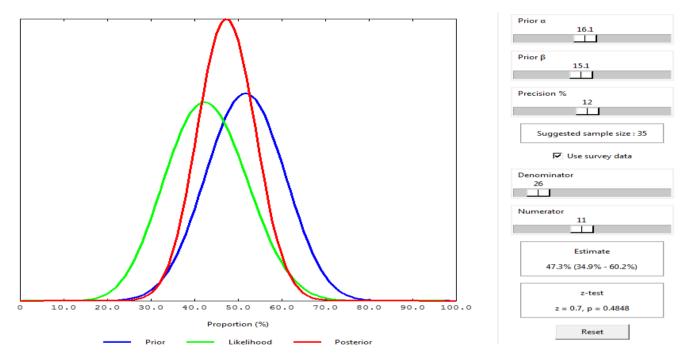
Where:

Cin= Active cases in Program Rin= Recovering cases in program Cout= Active cases not in Program Rout= Recovering cases not in program

5.3.2 MAM Results for Wide Area Survey.

MAM Case	MAM covered	MAM not covered	Recovering MAM
21	8	13	3

Figure 20: Result of MAM Wide Area Survey



5.3.4 Posteror Distribution for MAM

Using the above formula and data, the coverage for MAM found to be. 47.3% (34.9% - 60.2%)

Z-TEST

z = 0.7, p = 0.4848

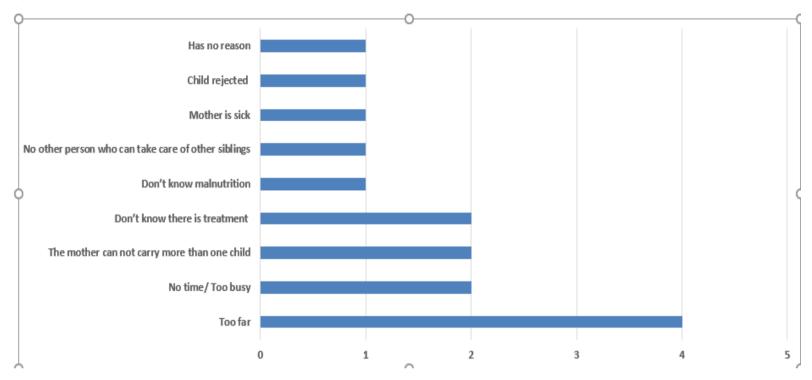
If p > 0.1, no evidence for a prior-likelihood conflict.

The results of the wide area survey showed that 21 MAM cases were identified in the villages sampled for the survey. Out of the 21MAM cases found, 8 of them were in the program with the rest 13 being uncovered. Also, there were 3 recovering identified.

Among those who were not in the program, a questionnaire was applied to help investigate the reasons for noncoverage. The results are presented in the figure below.

5.3.5 Reason for not covered in MAM

Figure 21: Reason for not covered

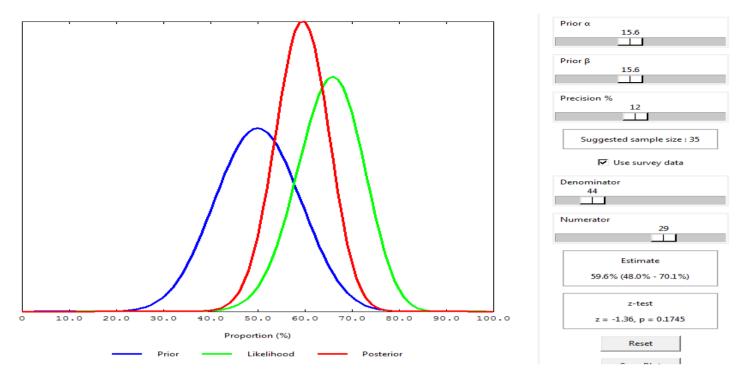


Most of the caregivers (92%) knew malnutrition and that their child was sick, with 77% siting distance as a major issue to access the service at the nearest health facility. One caregiver reported that the child was discharged cured, this was either a case of relapse or wrong discharge. Mothers being busy especially during the dry season as distance of trekking to water point was also a barrier to access the service.

5.4.1 Calculation of the Posterior for SAM Single Coverage Estimate.

Table 6: SAM Wide Area survey results

		C-IN	C-OUT	R-IN
Team	SAM Case	SAM covered	SAM not covered	Recovering SAM
Total	21	11	10	18



5.4.2 Posteror Distribution for SAM

Using the above formula and data, the coverage for MAM found to be. 59.3% (48.0% - 70.1%)

Z-TESTz = - 1.36, p = 0.1745

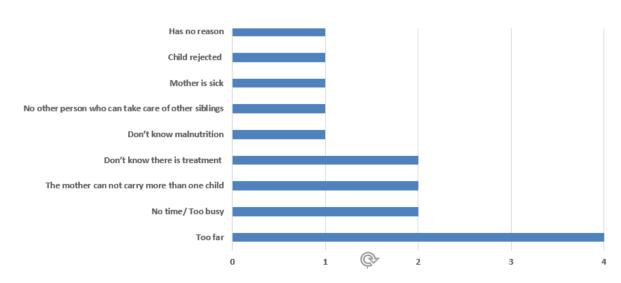
If p > 0.1, no evidence for a prior-likelihood conflict.

The results of the wide area survey showed that 21 SAM cases were identified in the villages sampled for the survey. Out of the 21SAM cases found, 11 of them were in the program with the rest 10 being uncovered. Also, there were 18 recovering identified during active findings.

Among those who were not in the program, a questionnaire was applied to help investigate the reasons for noncoverage. The results are presented in the figure below:

5.4.3 Reason for not being covered in SAM

Figure 22: Reasons for not being covered



21

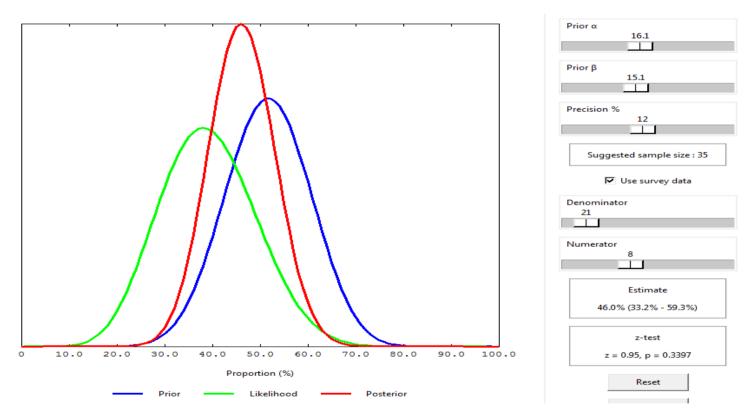
5

Caregivers reported distance as a major barrier same as in MAM cases not in program. Some caregivers reported being busy (with household workload, migration, herding), not knowing there is treatment and not being able to carry more than one child to the health facility.

5.5.1 Effectiveness of timely case-finding and recruitment indicator MAM

Number of current cases attending the program Number of current cases

- Numerator=8(C-in)
- Denominator=21(C-in + C-out



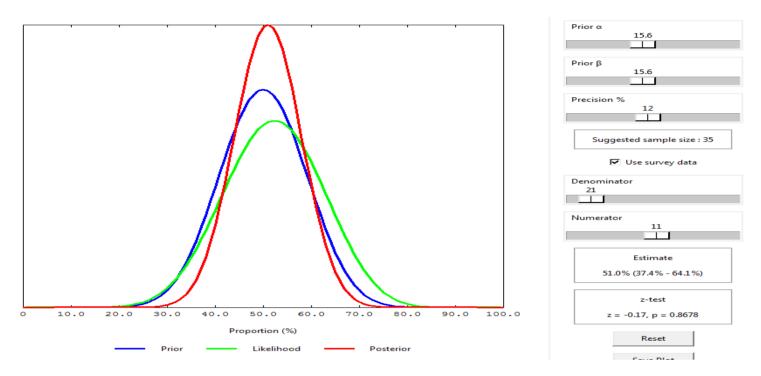
Using the above formula and data, effectiveness of timely case finding for MAM was found to be. 46.0% (33.2% - 59.3%) which was relatively close to coverage estimate for MAM calculated above

Z-TESTz = 0.95, p = 0.3397

If p > 0.1, no evidence for a prior-likelihood

5.5.2 Effectiveness of timely case-finding and recruitment indicator SAM

- Numerator = 11 (C-in)
- Denominator = 21 (C-in + C-out)



Using the above formula and data, effectiveness of timely case finding for SAM was found to be. **51.0%** (37.4% - 64.1%) which was relatively close to coverage estimate for SAM calculated above.

Z-TESTz = -0.17, p = 0.8678

If p > 0.1, no evidence for a prior-likelihood

6.0 DISCUSSIONS

Wajir North Sub County Single Coverage Estimation for OTP and SFP was **59.3%** (**48.0%** - **70.1%**) and **47.3%** (**34.9%** - **60.2%**)%) respectively, which are both at SPHERE standards for rural IMAM treatment programs (50%) and represent significant justification for good program perforce. The need mate was also calculate using program data performance and coverage estimate which stands at **48.276** and **42.57** for SAM and MAM respectively.

The most common primary barrier to access OTP and SFP services was distance where by most of the village/settlement without health facilities are far from the catchment facility for more than 15km. Since there is no proper transport system in the area, it is very difficult for mothers to take their children to health facilities where services are offered. Other barriers that also stands out includes; stock out of commodities which comes due to logistical challenges as the sub county is very far from the head quarter. Insecurity due to frequent clan clash has also affected service delivery.

The ongoing outreach program from red cross is really helping. However, the SQUEAC team noted that there is need to revise the outreach sites to reach to far areas like Milsaded and Tulu Roba with high workload of malnutrition which are not covered.

The coverage assessment team noted that there are no systematic screening and very low active case finding as most of the admission happens only during mass screening. Low staffing as most of the facilities are maned by one staffs, creates a high burden for health workers on implementation of the program and even halt the program when the only staff is on

leave/off, attending workshops or training. Consequently, there is little capacity for following best practice and ensuring a good quality of care, for example, lack of systematic screening, completing records and registers comprehensively, delivering health education sessions and optimizing on growth monitoring. It is important that CHVs and program staffs are equipped with the resources and competencies to ensure a good quality of care.

7.0 ACTION PLAN

The following recommendations were developed initially with the assessment team and are based on the findings from the assessments.

Recommendation	Justification		
Integrate and strengthen defaulter tracing mechanism with EPI system	Defaulter rate at 18% due to non-compliance coupled with migration especially along international borders		
Carryout active case finding through community units and health facilities	Late identification and referral of children i.e admitted with a MUAC of less than 10.5 cm		
Carryout periodic mass screening			
Collaboration of communities to develop mechanism and strengthen existing structures on treatment of acute malnutrition (iCCM and CHUs) using community resources e.g storage facilities and safety of commodities though establishment of community commodity safety committee	Distance to health facilities and unsustainability of outreach services		
Awareness creation and sensitization of communities on RUTF as a therapeutic feed and sharing, and periodic monitoring at household with IMAM cases	Sharing of RUTF/RUSF RUTF / RUSF seen as food		
Linkage of IMAM clients with Mother- to mother support group and community units for follow-up			
Recommendation	Justification		
Periodic data quality audit and support supervision	Data quality issues		
Periodic on-job training and support supervision			
Carryout community mobilization through community dialogue, community Barraza and radio community dialogue	Inadequate knowledge on malnutrition		

8.0 ACTION PLAN

Action	Time line
Integrate and strengthen defaulter tracing mechanism with EPI system	February 2018
Carryout active case finding through community units and health facilities	February 2018
Carryout periodic mass screening	April 2018
Collaboration of communities to develop mechanism and strengthen existing structures on treatment of acute malnutrition (iCCM and CHUs) using community resources e.g storage facilities and safety of commodities though establishment of community commodity safety committee	April 2018
Awareness creation and sensitization of communities on RUTF as a therapeutic feed and sharing, and periodic monitoring at household with IMAM cases	February 2018
Sensitization and mother support groups	February 2018
Linkage of IMAM clients with Mother- to mother support group and community units for follow-up	April 2018
Periodic data quality audit and support supervision	April 2018
Carryout community mobilization through community dialogue, community Baraza and radio community dialogue	March 2018

9.0 ANNEXES

Annex I OTP Boosters

OTP BOOSTER	SOURCE	METHOD
I. Good health seeking Behavior	3	A
2. RUTF seen as medicine	 	A
3. Awareness of the program	8,3,16	B',A,D
4. Awareness of the treatment protocol	3	A
5. Committed CHVs	6"",5,14	A'''
6. Active case finding	6",3	A"
7. Systematic screening (Daily)	9,18	A'
8. Availability of commodities	2,13,9	B,A'
9. Functional SC	18	A
I0. not stigma	6,2	A,B
II. Access of OTP services	1,18	A
I2. Good linkage between facility and th community	e 6,8.3,9	А''',В
I3. Appreciation of the service	8,6',1,2',13,9	B',A''''
I4. Use of available tools MOH 100	6	A,C
I5. Proper documentation of OTP register	15	С
I6. Capacity of the H/W	16,9	D,A
I7. Outreach services available	6, 18	A,C
18. Community mobilization	6	A

19. Defaulter tracing mechanism	6,9'	A"
20. Good Staff attitude	4	В

Annex 2 OTP Barriers

OTP BARRIER	SOURCE	METHOD
I. Inactive/ dormant MTMSG	9	A
2. Poor community sensitization on the program	1,2	A,B
3. Poor health seeking behaviour	8	В
4. Competing priority from the caregiver	3	A
5. Sharing of OTP commodities	13,6	В
6. Poor community sensitization	1,2	A,B
7. Limited regular meeting between Staff/CHVs/ CU	9,6,18	A'
8. Low involvement of community leaders in planning dissemination of nutrition activities	g, 1,14	A"
9. Weak mechanisms of giving feedback	1,6	A'
10. Inadequate knowledge of OTP treatment protocol	13,6	В
II. Inadequate knowledge on malnutrition	6	A
12. Nutrition Commodities seen as food	4	В
13. Facility not operational	6,9, 18	A
I4. Staff turnover in the county	18	A
I5. Long distance	2,13,6",3	B'.A",D
16. Insecurity. I.e. clan conflicts	18	A
I7. Lack of incentive/motivation for CHV	9,6"	A'''
18. High CHV workload at the facility	9'6	A

19. Stock out of RUTF commodity	13,4,6,16	B,A,D	
20. Shortage of qualified staffs	6,16	A,D	
21. Weak active case finding	9	A	
22. Weak referral and follow-up	3,9	A	
23. Weak systematic screening at the facility level	18	A	

Annex 3 SFP Boosters

SFP Booster	source	method
I.Active case finding	6	A
2.Systematic screening	9	A
3.Committed CHV	6,5,14	A
4. Good linkage between facility and community	6, 8,3,9	A
5. Community mobilization	6	А",В
6. Awareness of SFP program	8	С
7. Not stigma	8	A,C
8. Plumpysup (RUSF) seen as medical supply	1,9	A
9. Availability of sfp service	1, 9	A
10.Outreach service	6	A''
I I.Ease of access	8	B''',A'
12. Appreciation of service	8,1,2,13,9	В
13. Capacity to provide quality service from health staff	9, 18	A
14.Training of staffs on imam	9,18	A
I5.Availability of sfp commodities	2,13,9	B,A'
16. Availability of tools	8	A,B
17. Proper documentation of registers	6	A
18. Good defaulter tracing mechanism	6,9	A'

19. Good health seeking behaviour	7	В

Annex 4 SFP Barriers

SFP BARRIERS	SOURCE	METHOD
I.Not active case finding at the community level	9	A
2.Inactive mtmsgs	9	A
3.Poor community sensitization	1,2	A,B
4.Not regular meetings between staff and community	9,6	A'
5.Not involvement of community leaders in planning and dissemination or nutrition service	¹ 1,14	A'
6.Not mechanism of giving feedback	1,6	A'
7.Knowledge gap on malnutrition	14	A
8.Sharing of SFP commodities	13,6	B,A
9.Long distance to sfp sites in some villages	2",13,6,3	B', A'''
10.migration (Out-migration leading to defaulting)	2	В
I I.Some facilities not operational i.e newly built watiti dispensary	6	A
12.Poor health seeking behaviour	8	В
13.not incentives and motivations to CHVs	9,6"	A'''
14.Shortage of staff	6	A
15.Stockout of SFP commodities	13,6	B,A
16. High CHV workload at the community level	9,6	A'
17. Sale of RUSF (RUSF readily available in the market)	1,2	A,B

18.Not adherence to treatment protocol.	15	C

Annex 5 List of selected villages

Bulla Dukat (Guarar),Bulla Wagberi (Gurar)	
Qarsa Bulla,Qarsa Sare	
arte,Dugo	
Vatiti A,Godoma	
Valesentitu (Bute)	
Canchor, Sirey	
Bula Bishar(Korondille),Bula Hagar (Korondille)	
ula Roba,Milsadeed	
Bulla school (Lesanyu),Bulla Dagax (Lesanyu)	
Jran (Bute)	
losque (Buna),Shauri Yako (Buna)	
eramo B,Garse Ake	
Bula Luku (Malkagufu),Msikiti(Malkagufu)	
/adina (Malkagufu),Bula Busia (Korondille)	
Bute Gotha (Bute)	
losque(Danaba),Manguro (Adadijole)	
bajida (Danaba),Mogore (Danaba)	
ladaraka (Danaba),Machine (Danaba)	
Sirte (Qudama),Bosicha	
Gumar(Bute)	

Annex 6: List of people trained during SQUEAC

NO	Participants Name	Gender	Designation	
1	Barack Ngesa	М	MLT	
2	Anthony Chege Kaiga	М	nurse	
3	Hassan Abdi Mohamed	М	SCNO	
4	Abdihamid Mohamed Noor	М	SCPHO	
5	Abdinasir Adow	М	РНО	
6	Abdirahman Hassan Abdinoor	М	СНА	
7	Dr Hussein Adan	М	MO	
8	Rodha Chebet	F	nurse	

9	Naomi Nge'ny	F	Nutritionist
10	Hassan Abdub Saleh	М	SNO
11	Mohamedkhalid Hared	М	NO
12	Joe Gichuhi Mbuchi	М	HRIO

Annex 7: Chronograme of Training and Assessment

Period	Task	By Who
19 th October – 11 th November 2017	Training of County Squeac teams	ACF Consultant (Lio)
27 th November 2017	Pre Squeac data collection	
5 th – 7 th December 2017	Training for enumerators	County with support from NIWG
8 th – December 2017	Quantitative data collection	
9 th – December 2017	Small area survey	
II th December 2017	Large area survey	
18 th – December 2017	Data analysis &Report writing	
9-10 th December 2017 – 1^{st} and 2^{nd}	Validation at NITWG	
Stage		
January 2018	Validation at NITWG	

ANNEX 8: Questionnaires _KII, IDI, FGD

Survey Questionnaire for caretakers with cases NOT in the programme – OTP / SFP (circle)					
Team N	Team No:				
Sub-cou	unty:	HF:	Village:		
Child N	ame:				
1a. 	DO YOU THINK YOUR	R CHILD IS SICK? IF YES, WHA	Γ IS HE/SHE SUFFERING FROM?		
1.	DO YOU THINK YOUR	CHILD IS MALNOURISHED?			
2.	DO YOU KNOW IF TH CENTRE? □ YES	ERE IS A TREATMENT FOR MA	ALNOURISHED CHILDREN AT THE HEALTH		
3.	 YES DNO (stop) WHY DID YOU NOT TAKE YOUR CHILD TO THE HEALTH CENTRE? Too far (How long to walk?hours) No time / too busy Specify the activity that makes them busy this season				
4.	SFP OTP/S OTP/S SFP OTP/S O	C (circle) □ NO (=> stop!) not treated now? Why? when?)	NUTRITION AT THE HC? Which programme?		

(Thank the mother/carer)

SQUEAC: Active Case Finding Data collection - SAM

Sub-county: _____

1F: _____ Village: _____ Team: ______ _ Date : _____ SAM Oedema SAM Age MUAC SAM Verification with Health Card / Child's name (+, ++, Case Not Recovering (Months) Covered RUTF (tick) (mm) Y/N +++) covered Health Card RUTF RUTF Health Card Health Card RUTF Health Card L RUTF Health Card RUTF Health Card L RUTF Health Card RUTF Health Card RUTF Health Card 🔔 RUTF RUTF Health Card Health Card L RUTF Health Card RUTF Health Card L RUTF Health Card RUTF Health Card RUTF Health Card RUTF Health Card RUTF Total

Annex 9. Local Terminologies

		•	
No.	TERM	SOMALI	BORANA
1	Very thin	Weyt/aato	Khala
2	Sick	Hanun	Faydab
3	Swellings	Barar	lit
4	Thin legs	Lugaduban	milqaqala
5	Distended Stomach	Calol wey nat	Gara it qab
6	Weak	Laif	Lafa
7	Dehydration i.e. loss of water in the body	Biyalaan	Bisat nafkesa hobay
8	Brown hair	Tima cadad	Rifes dima
9	Thin arms	Gacma dub	Ark qalin
10	Malnutrition	Nafagadara	Defe
11	Orphan	Agoon	lyees/iyeeti
12	Poverty	Sabool/fakir	miskin
13	Child mother died	Rajo/goldow	Agonti
14	Child not breastfed	Nas Moga	Ilman much inhodin
15	Diarrhoea	Shuban	Kasa
16	Vomiting	Mataq	Didiq
17	Fever	Qanda	Qando
18	Plumpy nut	Buskut bunjugow/duduq	Malado
19	Twins	Mattan	Laku
20	Disable child	Curyan	Naf