WAJIR COUNTY SEMI-QUANTITATIVE EVALUATION OF ACCESS AND COVERAGE (SQUEAC) ASSESSMENT REPORT

4th May 2023 to 5th June 2023

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Abbreviations/Acronyms

AMN	Acute Malnutrition
BBQ	Barrier Booster Question
BSFP	Blanket Supplementary Feeding Program
CC	Community Conversation
CHAS	Community Health Assistants
CHV	Community Health Volunteer
CMAM	Community Management of Acute Malnutrition
CNC	County Nutrition Coordinator
CU	Community Units
FGD	Focused group discussion
GAM	Global acute Malnutrition
KII	Key Informant interview
SSI	Semi Structured interview
IPC	Integrated phase classification
IMAM	Integrated Management of Acute Malnutrition
LQAS	Lot quality Assurance Sampling
MAM	Moderate Acute Malnutrition
MUAC	Mid Upper Arm Circumference
NDMA	National Drought Management Authority
OTP	Outpatient Therapeutic Program
SAM	Severe Acute Malnutrition
SCNC	Sub County Nutrition coordinator
SFP	Supplementary Feeding Program
SLEAC	Simplified Lot Quality Assurance Sampling Evaluation of Access and Coverage
SQUEAC	Semi Quantitative Evaluation on Access and Coverage
UNICEF	United Nations Children's Fund
WFP	World Food Program
WHO	World Health Organization.

Executive Summary

Wajir county is located in the North Eastern region of Kenya. It is an ASAL county that is affected by recurrent droughts and disease outbreaks including a cholera outbreak that is currently active. The latest drought is as a result of five failed rain seasons that has affected the horn of Africa including the Northern part of Kenya.

This coverage report details the SQUAEAC assessment that was conducted in the County from the 4th of May 2023 and concluded on the 2nd of June 2023 and covered all the livelihoods of the county. It was supported by the County department of health in the county with financial support of the Nutrition and health partners in the county including; UNICEF, WFP, WARDA, Save the children. A total of 22 participants drawn from the county department of health and partners' participated in all the stages of the assessments as part of capacity strengthening of the team in coverage assessment.

The assessment also benefited from the technical support of the NITWG at all stages of implementation that included validation of the methodology, appraisal of stage 1, 2 and preparation of stage 3, implementation of stage 3 and the validation of the final results and reports.

The 2023 SQUEAC assessment was a follow up of the SLEAC assessment that was conducted in 2020 and The main objective of the survey was to assess IMAM program coverage in Wajir County with the following specific objectives; To classify a headline coverage of the IMAM program, Identify factors affecting the uptake of the IMAM program (barriers and boosters), Develop specific recommendations to improve acceptance and coverage of the program and to eenhance competencies of the county nutrition program staff in coverage survey methodology.

The single estimate coverage from the SQUEAC coverage assessment for Wajir county in 2023 is **62.8%(CI 95% :54.2 - 70.3)** for OTP and **65%(CI 95% :58.3 - 71.3). for SFP. From the** program's effectiveness (cure rate) was 96.2% and the OTP coverage was 62.8% therefore the 'met need' for the OTP in Wajir was 60.2% (i.e. 96.2%*62.8%) and the met need for SFP is 62.7% from the calculation (96.6%*65.0%). The results are above the single estimate threshold for rural areas of 50% and thus calls for sustained efforts to further improve and maintain so as to reach all children in need of IMAM services.

The above 50% threshold performance of coverage in Wajir county has been made possible by the following major factors: Adequate human resources available in the IMAM program, strong and active CHVs, high coverage of outreaches to the rural villages in the county, Good will and partnership with various stakeholders, Availability of Nutrition supplies and commodities, Awareness of the IMAM program by the community, The family MUAC approach, cash transfer programs and the positive attitude of the community towards the IMAM program.

The assessment also identified key challenges and gaps in the IMAM program which should be addressed to ensure access and coverage including; High maternal workload, stock outs of essential drugs in the health facilities and outreaches, scheduled service days for IMAM, non-adherence to treatment guidelines by health workers, closure of health facilities due to insecurity or absenteeism of health workers , delegation of IMAM management to CHVs, ineffective defaulter tracing mechanism, theft of nutrition supplies, Stock outs of essential nutrition supplies and the availability of nutrition supplies in the market. Analysis of the barriers and boosters highlighted calls for consorted efforts to addressing the challenges to ensure more access by the population to the lifesaving IMAM services. The key recommendations from the assessment include advocating to the County assembly for the passage of the CHS bill to law so that

remuneration and motivation of this critical cadre can be implemented as they reach more and all areas of the county. Capacity strengthening of the nutrition workforce at all levels is also critical in improving coverage as well as community initiatives e.g. the family MUAC approach to ensure the caregivers are able to monitor the nutrition status of their children and seek appropriate care whenever in need of treatment.

Commodity management is also a key area that requires effort from all levels and stakeholders in ensuring a healthy pipeline, management and awareness at community level to ensure that they are utilized as per the guidelines and protocols.

Overview Wajir county

Wajir County is located in the North-eastern region of Kenya, covering an area of 56,685.9 Km^2. It borders Somalia to the East, Ethiopia to the North, Mandera County to the Northeast, Isiolo County to the Southwest, Marsabit County to the West and Garissa County to the South as shown in Figure 1 below. Administratively, it has six constituencies: Wajir East, Tarbaj, Wajir West, Eldas, Wajir North and Wajir South. It is further divided into 30 wards. Wajir County is a semi-arid area falling in the ecological zone V-VI. Zone V receives rainfall between 300-600mm annually. County divided into four livelihood zones: Agro-Pastoral, Pastoral all species, Pastoral cattle, Pastoral camel and formal employment. Estimated population 781,263 (2019 Kenya population and housing census), with projected population of 870,636[1] in 2023. The proportion of under-five population is 15.2% of the total population.

Major inhabitants of the county are the Somali community; other minor inhabitants are Borana, Meru, Kamba and few others in the urban settlements.
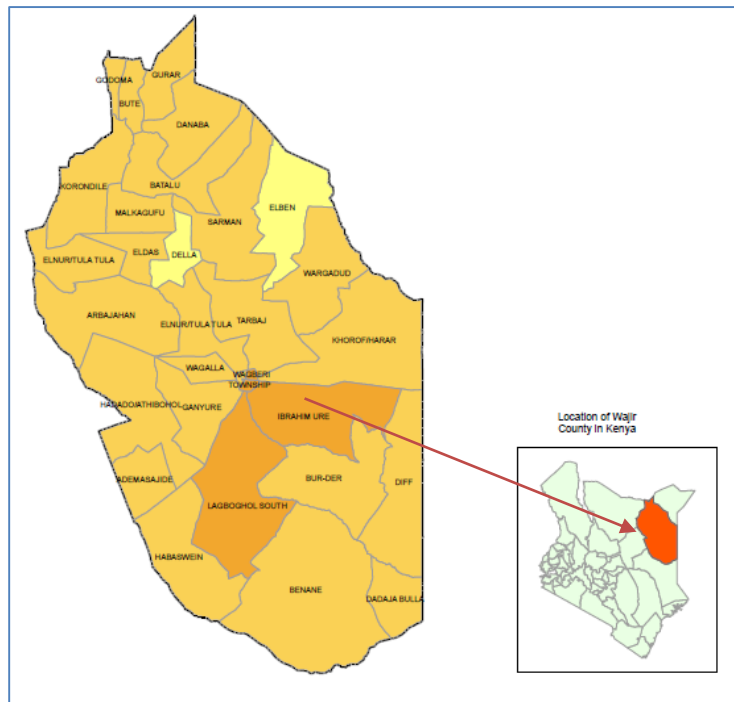
Figure 1: Map and location of Wajir County in Kenya

Nutrition Situation

According to the SMART survey conducted in February 2023, the global acute malnutrition (GAM) prevalence by WHZ was at 14.95 % whereas severe acute malnutrition (SAM) prevalence was at 2.5%. This is classified as high according to WHO wasting classification of 2017. GAM by MUAC was at 4.4% of those severe by MUAC were 0.7%.

According to integrated phase classification for acute malnutrition classified the County is in Critical Phase (IPC AMN phase 4)

38.8% of children were reported to be ill within 2 weeks prior to survey and majority of complained of having acute respiratory infection/cough (76.7%), fever (32.7%) and Watery diarrhea at 24.10%. Sanitation still remain sub-optimal across the county with only 16.5% of the households treating their water before drinking, 44.2% using soap and water for handwashing and majority (49.65%) of the households have do not have relieving points and practice open defecation.

According to NDMA EW bulletin (Mar 2023), County drought status is at Alarm and the trend improving across all livelihood zones.

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[1] 2019 Kenya Population and Housing Census – Analytical Report on Population Projections Vol XVI

The county has 120 public health facilities, 27 private facilities and 2 facilities run by FBO/missions. Of these, 1 is level 5 hospital, 10 are level IV hospitals, 26 level III health centers and 83 dispensaries

The county has 102 health facilities offering integrated management of acute malnutrition (IMAM) services that include six stabilization centers i.e. Wajir county referral hospital, Habaswein, Griftu, Eldas sub county hospital & Bute sub county hospital and Tarbaj

In response to drought and to improve access the County has mapped 270 outreach sites of this 257 are supported by partners

Integrated Management for Acute Malnutrition (IMAM) program is managed at the sub-county level; where each sub-county has a lead Nutrition Officer to coordinate nutrition activities in the sub-county. The standard Kenya IMAM management protocol is used in the management for acute malnutrition: In-patient program manage SAM cases with complication, Out-patient Therapeutic Program (OTP) centers manage SAM without complication and MAM cases are managed in Supplementary Feeding Program (SFP) sites.

 According to the 2020 coverage assessment (SLEAC) for the county OTP Single coverage was estimated at 78.5% (71.9– 85.1% 95% CI) and SFP posterior Single coverage was estimated at 65.4% (62.1 – 68.7% 95% CI). All the coverage estimates met the minimum SPHERE standards for the rural areas of 50%

Objectives
The main objective of the survey was to assess IMAM program coverage in Wajir County

The specific objectives
- To classify a headline coverage of the IMAM program
- Identify factors affecting the uptake of the IMAM program (barriers and boosters)
- Develop specific recommendations to improve acceptance and coverage of the program.
- Enhance competencies of the county nutrition program staff in coverage survey methodology.

INVESTIGATION PROCESS

Introduction

Semi Quantitative Evaluation on Access and Coverage (SQUEAC) methodology was used in the assessment coverage and one SQUEAC survey was conducted for the entire County. SQUEAC method is a comprehensive, iterative tool to analyze the barriers and boosters to coverage and gives estimate coverage. It also provides succinct actions for improving access and coverage (CMN). The method is a low resource 3 stage model as described below:

Stage 1 involved identifying areas of low and high coverage as well as reasons for coverage failure using routine program data, any other existing data and qualitative data. Quantitative routine program data was obtained from the IMAM registers of health facilities from the three Sub- counties. Qualitative information was obtained from various sources that included health facility in charges and nutrition officials, religious leaders, caregivers, health facility nurses, traditional birth attendants (TBAs), Traditional healers, CHWs/CHEWs, program staff, community members and local leaders.

Stage 2 involved confirming the location of areas of high and low coverage and the reasons for coverage failure identified in stage 1. This was done using the small studies, small surveys and small-area surveys.

Stage 3 involved providing an estimate of overall program coverage using Bayesian techniques. The prior mode was computed using the average of the total sum of weighted boosters and barriers plus unweighted barriers and boosters, concept map plus the belief (histogram). This combination both identifies key issues affecting presentation and program uptake real implementation whilst also establishing the actual levels of coverage attained. Vitally, all this can be done in time, allowing the tool to be of immediate practical use to tweak program design and in response to the information obtained (Mark Mayatt 2012).

STAGE 1: Identification of areas of Low and High coverage

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) and WHZ score on admission, length of stay in weeks and the physical address (villages) of the beneficiaries. In addition, qualitative and quantitative data was collected from the community and the health facilities with the basic aim of triangulating the information of IMAM program.

In order to identify areas of high and low coverage, analysis of routine program data was done. Data was collected in all 102 health facilities and its outreaches that offer OTP and SFP program in the entire county for a period of 12 months (From May 2022 to April 2023). Data collected from the sites included; OTP and SFP admissions per month, admission MUAC, admission WHZ score, exits (cured, defaulters, deaths, non-responses) on monthly basis, defaulters based on their villages of residence and defaulting visits and disease calendar.

The investigation team also developed seasonal calendar during the first stage. Qualitative data was also collected using a number of methods and sources to a point of sampling redundancy as it will be described later in the report

Stage 1: Quantitative Data

Program data

Program data was collected from In-patient, Out-patient Therapeutic Program and Supplementary Feeding Program beneficiaries' registers, monthly nutrition program reports, stock bins, stock cards and ration cards from all from all the IMAM implementing health facilities. Gaps were identified in the process and including missing discharge criteria in documentation, non-documentation of absentee clients, lack of referral slips and lack of ration cards for OTP and SFP programs.

Monthly reports in MOH 713 were well filled in some facilities although some did not tally with the source documents particularly beneficiary registers including MOH 368, MOH 409 and MOH 410A.

Ration cards are not in use at the health facilities in the county because of stock outs and procurement has not been done for long period of time. Treatment documentation is thus being done in the mother child booklets (MOH 216) and the IMAM registers.

Evidence of Community Health Volunteer activity records varied from facility to facility with few cases of referral by CHVs evidenced by filed MOH 100 referral slips (in areas with strong Community Units)

Program data was collected from 102 health facilities offering IMAM services in the county and data from 7 facilities could not be collected due to insecurity or facility closure. IMAM services to some villages that do not have health facilities is offered through outreaches which at the moment stand at 95% coverage when analysis of operational vs mapped was done.

Inpatient data

In patient data collected from the 6 health facilities with inpatient services indicated that a total of 509 children were admitted between May 2022 and April 2023. 98% (499) of the admissions to IP were direct admissions an indication that only 2% (10) deterioration of OTP cases were observed. The admission trend during the period was high in the month of June 2022 and stabilized for the remaining part of the year with no seasonal variations noted. Figure 2 below shows the trend in admissions for the six IP facilities in Wajir County.

72.5% (214) of clients successively stabilized and were discharged to OTP as shown in figure 2 and 3 below. This was followed by those who were discharged as cured (22.3%) from the IP. 8 non respondents were also referred for specialized care during the same period due to other underlying medical conditions.

A total of 6 deaths were reported in Dec 2022, January 2023, March 2023 and April 2023 and are attributed to late admission to program evidenced by death within 24 hours of admission, due poor health seeking behavior and other opportunity costs related to charges for Inpatient services in Wajir County.
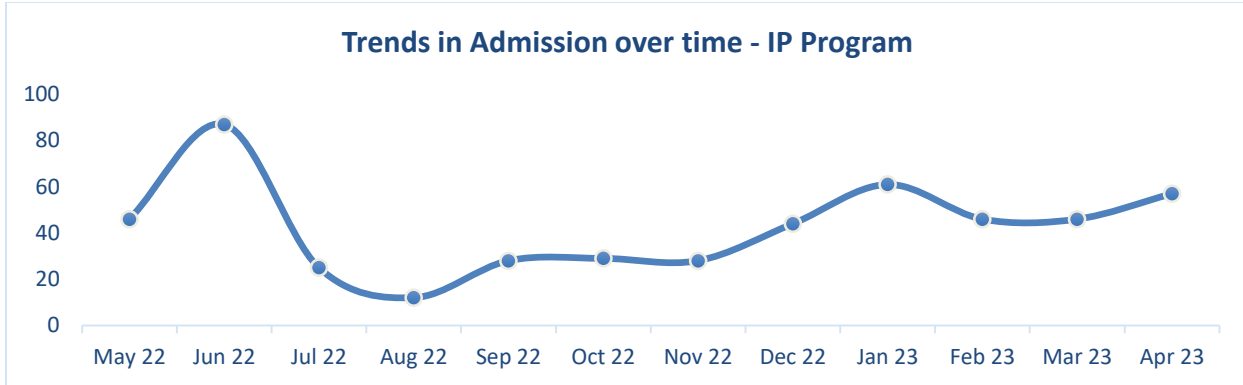
Figure 2:Trends in Admission over time - IP Program
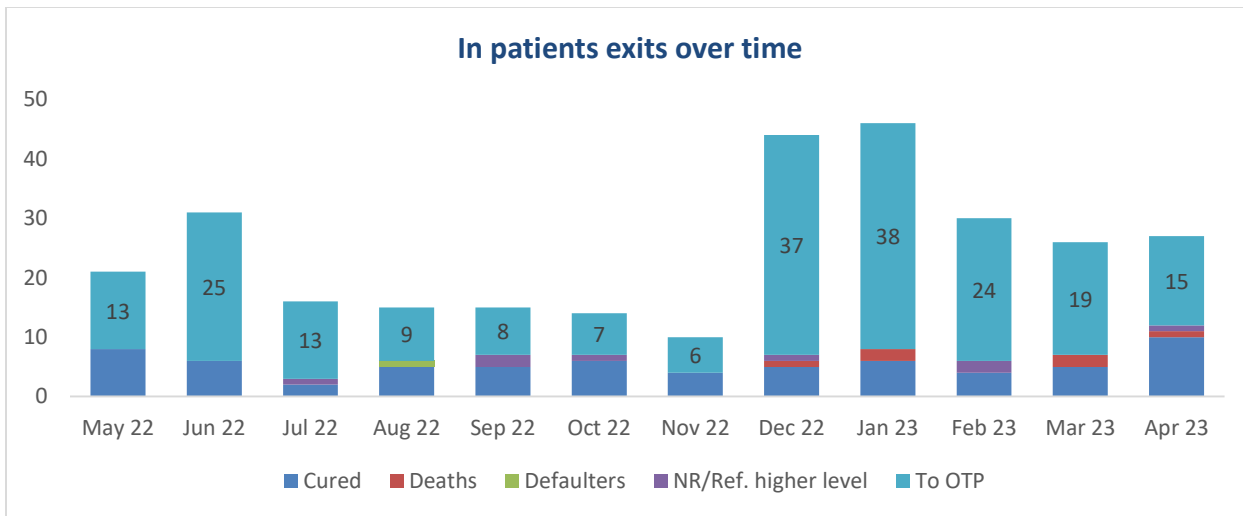
Figure 3:In patients exits over time

The median length of stay in days for the inpatient clients who were discharged as cured for the period of analysis is 6 days as shown in figure 4 below;
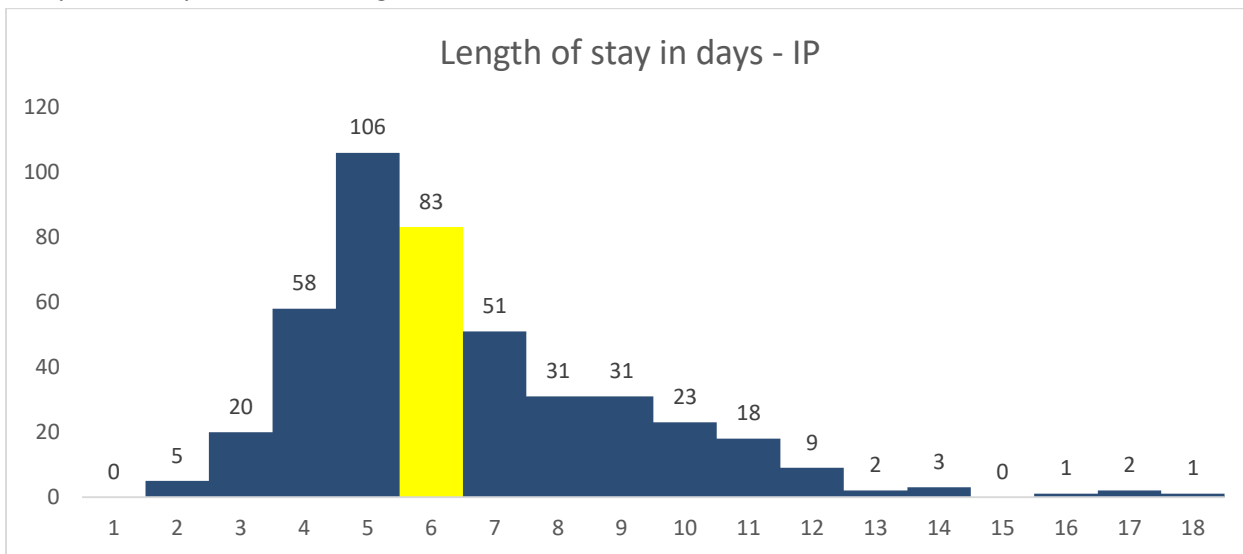
Figure 4:Length of stay in days - IP

OTP Admissions

A total of 10,820 children were admitted into the OTP program in Wajir County for the period May 2022 to April 2023. The county uses MUAC, WHZ score and bilateral pitting Edema as the admission criteria into the OTP with WHZ score being the dominant criteria since it captures more children for management of acute malnutrition with analysis of the data indicates that 66.6%(7214) admissions of the total admissions were by WHZ score. The admission trend for the period of analysis was stable with high admissions observed in June 2022, October 2022 and March 2023 attributed to exhaustive mass screenings conducted in the county as part of the ongoing emergency response and high incidence of diarrhea and ARI as shown in figure 5.

The main source of admissions to OTP program is self-referrals and diagnosis by CHVs and health workers during outreaches and home visits

Figure 5: OTP admission trends May 2022 to April 2023

	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23
Milk availability												
Maternal workload												
Diarrhoea												
ARI												
Outmigration/drought												
Mass screening												
Cholera												

6

Flash floods(affecting pipelines)												▓	▓
General elections			▓	▓									

OTP outcomes

In the period under review OTP program outcomes performance were within the recommended sphere standards for OTP of > 75% cure rate, <15% defaulter rate and < 10% cure rate as shown in figure 6. A total of 7482 children were discharged from the OTP program with 96.2% (7199) discharged as cured, 2.1%(161) as defaulters and 1.5%(117) as non-respondents. In the same period 5 deaths (0.006 %) were reported from Wajir west sub-county (Shanta abaq, Ademasajida, Tulatula) and Tarbaj sub-county (Mansa and Dureweey). Most of the non-respondents recorded were due to having an underlying medical condition or the sharing of commodities at household and community level as triangulated by the qualitative interviews.

Figure 6: OTP discharge outcomes

MUAC at admissions OTP

During the period of analysis, a total of 3606 Children were admitted into OTP using MUAC <11.5cm as a criteria for admission. Analysis of the data indicated that majority of children are admitted in OTP early with the median admission MUAC being 11.3cm as illustrated in figure 7 below. In this regard, children admitted in OTP program are likely to have good treatment outcome (cure). They are also unlikely to develop complications, default and take a shorter period in the program. As such, the community is likely to have a positive program opinion and hence early presentation to the program. Early admission was therefore one of the program boosters in the OTP program in Wajir.

From the data, 12.2% late admissions of MUAC less than 10.5cm were reported and are likely to result in poor treatment outcomes and in the long run create a poor perception of the OTP program.

MUAC at admissions OTP

Figure 7:MUAC at admissions OTP

OTP WHZ score at admission (n=7214)

Analysis of the 7214 children 6 to 59 months who were admitted by WHZ score showed that Majority (88.5%) were admitted with < -3 SD as shown in Figure 8, which is an indication of early admission and as guided by the IMAM protocols. Few 11.5% of children were admitted with <-2SD indicating wrong admission and could be due to the health workers not following the IMAM protocols. A small number (210) were admitted with a < -4 SD an indication of late admission which is associated with poor treatment outcomes, long stay in program and mortality. This can also lead to poor perception of the program by the community and even affect health seeking behavior whenever episodes of acute malnutrition are experienced.

A small number (31) of children were admitted with bilateral pitting oedema mostly from Tarbaj sub county.

OTP WHZ score at admission
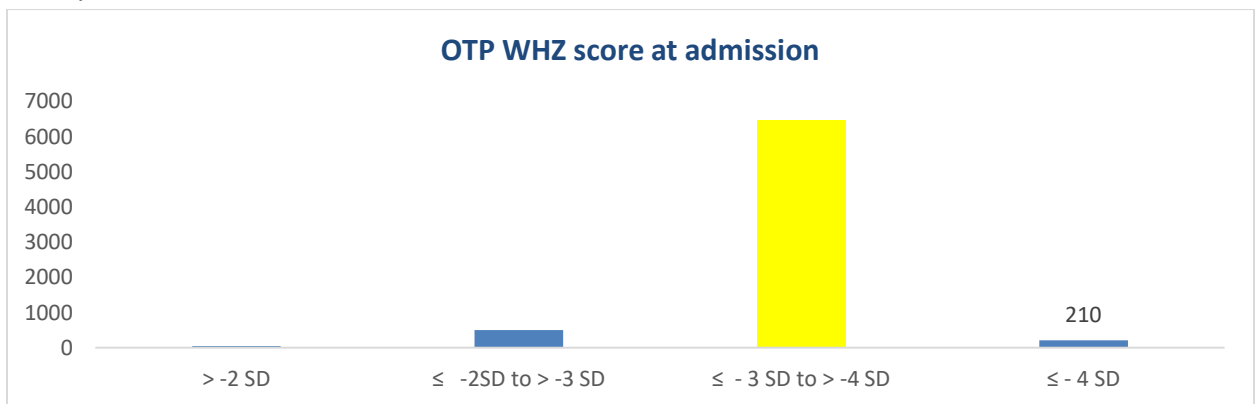
Figure 8:OTP WHZ score at admission

OTP MUAC at Cured discharge

This analysis was done for all children who were discharged as cured from the OTP regardless of the admission criteria. During the period of analysis, a total of 7209 Children were discharged as cured with a median MUAC of 12.1cm as shown in figure 9, indicating a long stay in the program before being discharged to SFP. 10.2% (636) stayed in OTP longer until their measurements were beyond MAM(>12.5cm). However, 54 Children were discharged prematurely before recovery and this could be due to the use of WHZ score as a criterion for discharge. It could also be an indication of health workers not adhering to the IMAM protocols of discharge.
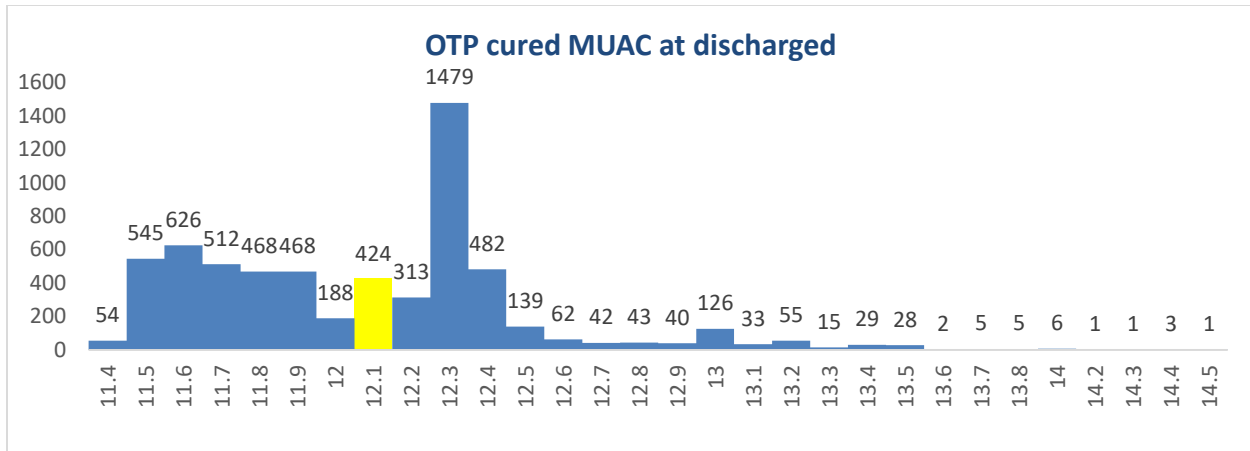
Figure 9:OTP cured MUAC at discharged

OTP WHZ score at discharge cured

A total of 7209 Children were discharged as Cured during the period of analysis. The discharges were done within recommended discharge criteria of the IMAM guideline which recommends that OTP children are discharged on attaining >3SD based on the WHZ score. Such children are not likely to relapse to the program once discharged to the SFP program to continue treatment and community. 536 cases early discharges with < -3SD were observed in the same period and is attributed to case mismanagement and also mix of the discharge criteria between WHZ and MUAC. Figure 10 below shows the discharges for WHZ for children cured.
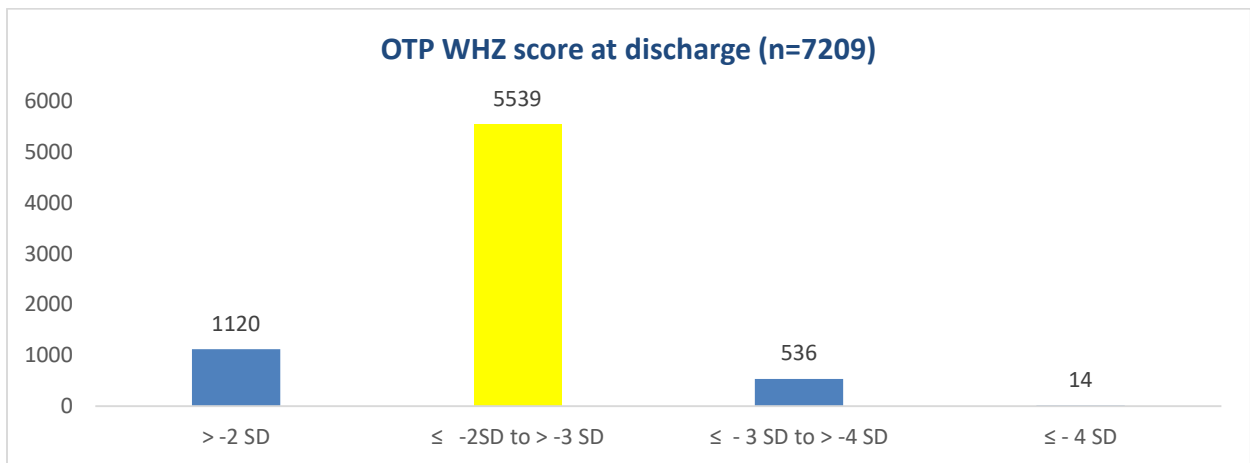
Figure 10:OTP WHZ score at discharge

OTP Cured Length of stay

Analysis of length of stay for OTP indicated that the median length of stay for the program was 10 weeks which implies long stay beyond the recommended 8 weeks as shown in figure 11 below. IMAM protocol adherence is a challenge observed from the late and early discharges and could be attributed to reports of CHVs managing the IMAM program in health facilities with few health workers. In the period of analysis 542 children were discharged early within 4 weeks of admission. The implication of early discharges is that such children are at high risk of relapsing and being readmitted to the OTP Program and thus impacting negatively on coverage.

In the same period 1216 late discharges of above 12 weeks to 29 weeks were reported meaning very long stay in program and can be attributed to sharing of OTP commodities at the family and community level. The long stay also calls for further investigation to determine if the children could be suffering from other underlying medical conditions.

OTP Length of stay Cured (n= 7198)
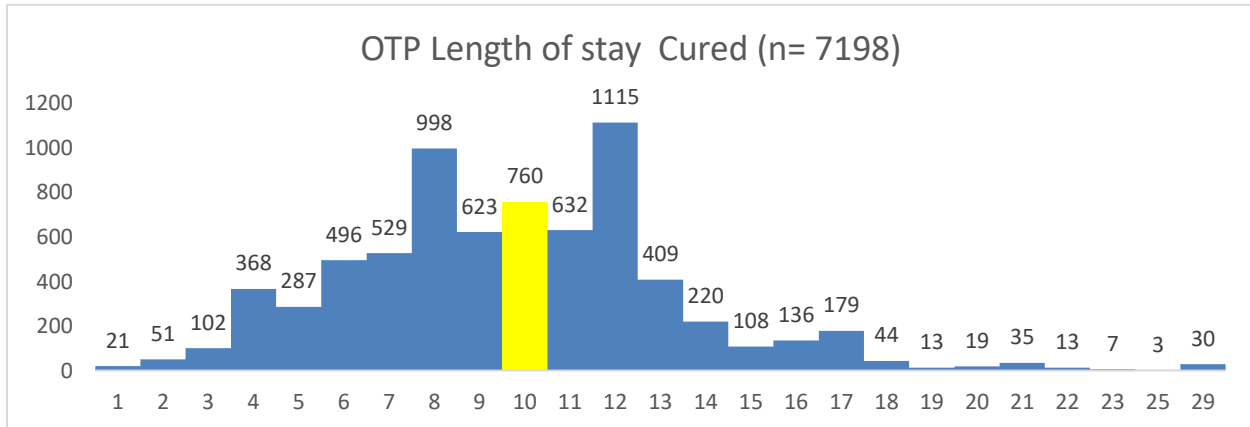
Figure 11:OTP Length of stay Cured

OTP MUAC at default

A total of 148 Children defaulted the OTP program with Median MUAC at default of 11.6cm (figure12) which is an indication that most defaulted after recovering but before formal discharge. This implies that some community members have poor adherence to the OTP treatment protocols and also poor defaulter tracing mechanism in some facilities to ensure that this group is returned to continue with treatment. Some 36.5% of children defaulted before the discharge criteria of >11.5, which is an indication of early defaulting and this may result in a high number of still vulnerable children in the communities presenting as SAM cases with the risk of mortality.

OTP MUAC at default (n= 148)
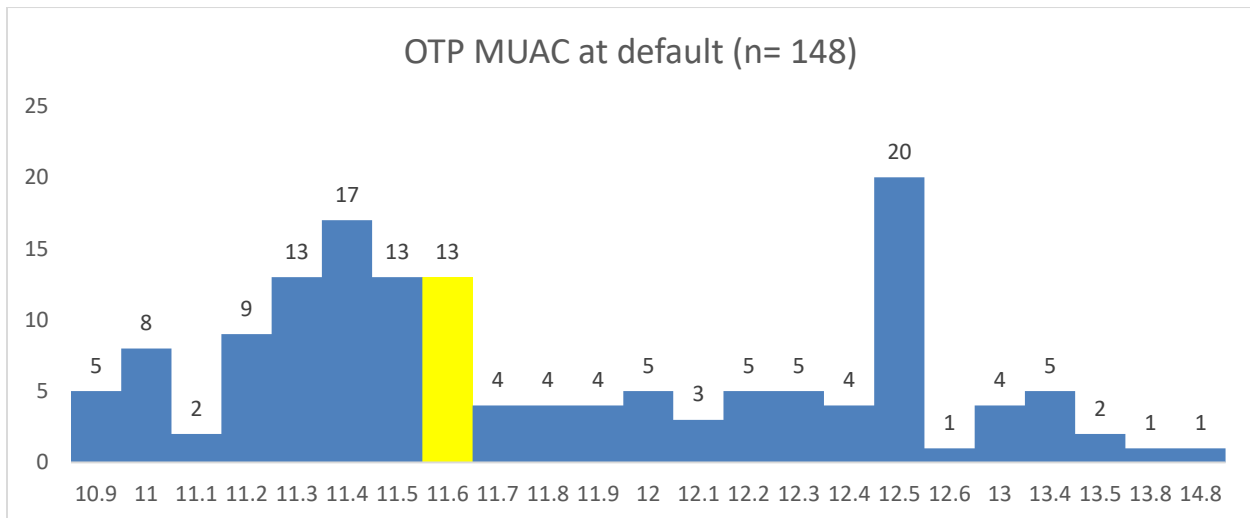
Figure 12: OTP MUAC at default

OTP WHZ score at default

A total of 167 children defaulted the OTP program with a median WHZ Score at defaulting of <-3SD indicating that a significant number were found to have defaulted while still with SAM as shown in figure 13. This is an indication of poor adherence to treatment protocol, and weak follow up mechanism of

defaulters. Defaulters were reported in 37 health facilities with the majority reported from Dilmanyaley, Ajawa and Abakore Health facilities. Early program defaulting results in poor treatment outcomes including death.
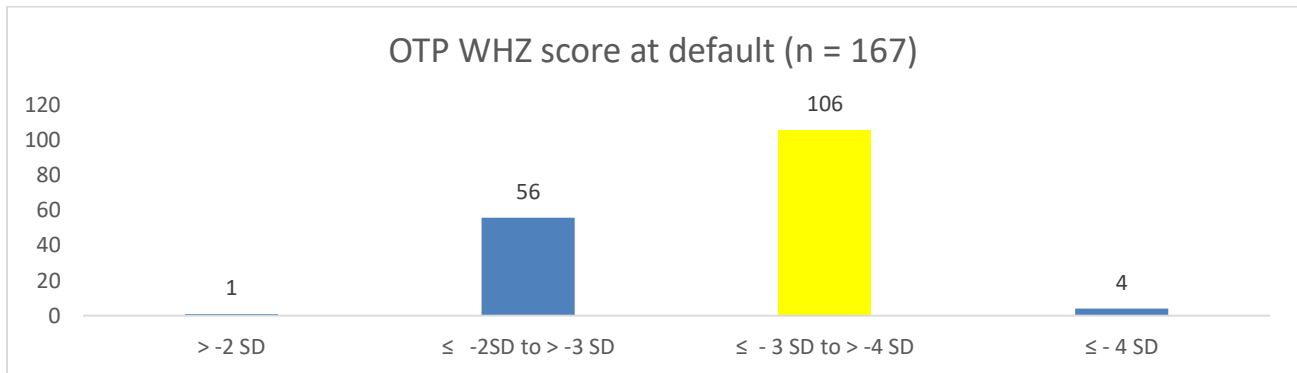
Figure 13:OTP WHZ score at default

OTP default Length of stay

During the period of analysis, a total 172 Children defaulted in the OTP program with a median LOS of 5 weeks (figure 14) which is an indication of early lost to follow up after attending the program for over 5 weeks and before final proof of cure visit. Early defaulting can result to relapse of the acute malnutrition episode and can also lead to mortality. Majority of the defaulters were from Dilmanyaley, Ajawa and Abakore health facilities.
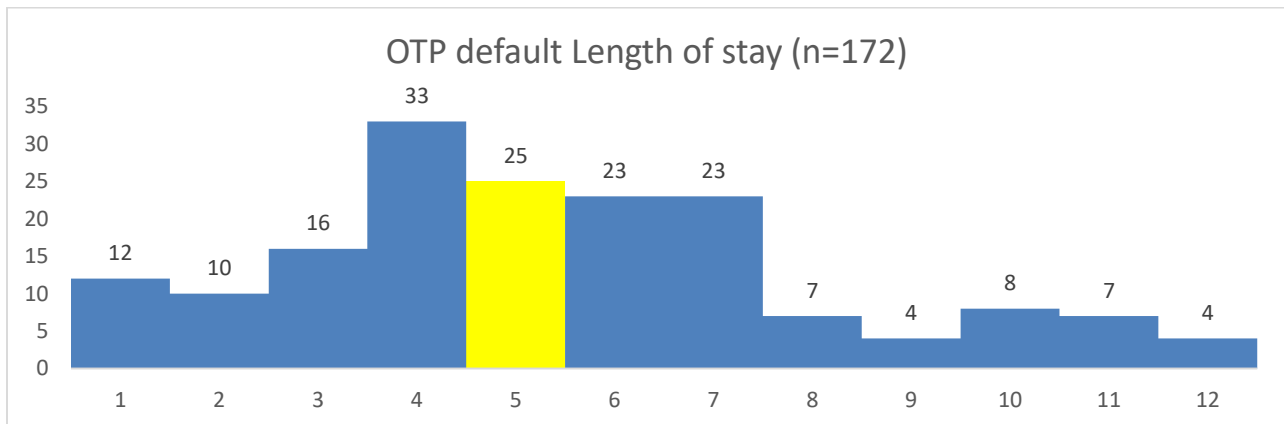
Figure 14:OTP default Length of stay

SFP program data

Supplementary feeding program services are offered in 102 health facilities in the county. The county uses MUAC and WHZ score as the admission criteria into SFP with the predominant Admission Criteria in Wajir county being WHZ score across all health facilities. During the analysis period 64.3% (24522) of all 38108 SFP admissions were by WHZ score. The main source of admissions into the SFP program was self-referrals mostly from the family MUAC approach and diagnosis by health workers from clients who had gone to the health facilities for other health services

SFP Admissions trends May 2022 to April 2023

Analysis was also done for program admission for SFP program from May 2022 to April 2023 for all the admission criteria as stipulated in the IMAM guideline and plotted as indicated in figures 15. below. The

investigation team developed a seasonal and events calendar which included all the events that may have contributed to coverage and access of IMAM program in Wajir County. The admissions trend was stable with high admissions recorded in June 2022, October 2022 and March 2023 attributed to mass screening which is a strategy in the ongoing emergency response which included integrated outreach activities as well us high incidences of ARI and diarrhoea.

Figure 15:SFP Admissions trends

	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23
Milk availability												
Maternal workload												
Diarrhoea												
ARI												
Outmigration/drought												
Mass screening												
Cholera												
Flash floods(affecting pipelines)												
General elections												

MUAC at Admission SFP

Data on MUAC at admission was collected from 13,586 Children whose admission criteria was by MUAC only during the period of analysis. A median MUAC of 12.3cm (Figure 16) was observed which indicates early case finding and positive treatment seeking behavior for malnutrition from a majority of the

community. It was however observed that 57 Children were admitted with a MUAC of <11.5cm indicating wrong admission criteria as these were OTP cases. 8.8% of the children were also admitted with a MUAC <11.8cm implying late admission into SFP. Wrong and late admissions are indications of poor adherence to the IMAM protocol and late health seeking behavior which could lead to poor treatment outcomes and eventually affect the perception of the community towards the SFP Program.
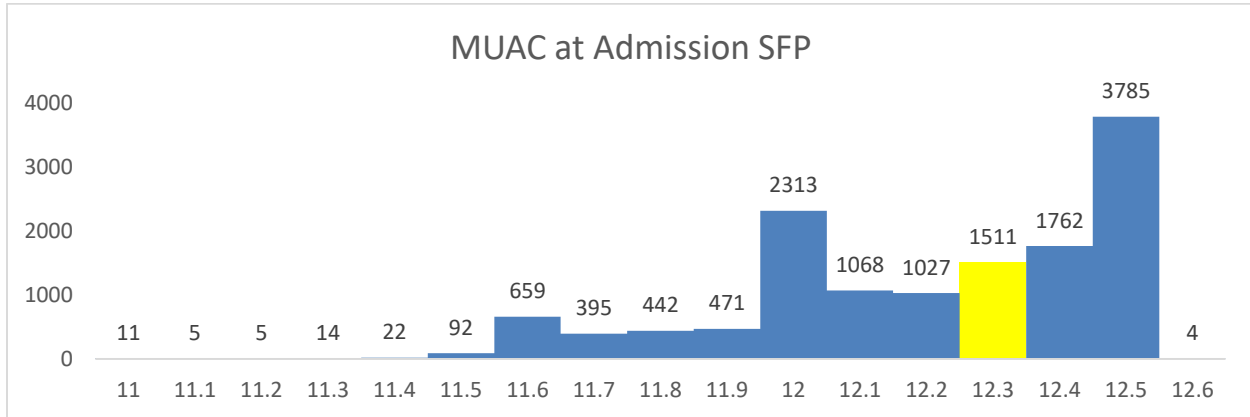
Figure 16:MUAC at Admission SFP

SFP WHZ score at admission

The analysis of the children admitted using WHZ score criterion a WHZ median admission of **≤-2SD to >-3 SD** indicating early and the correct admission for 95.2% (23367 Children) as per the IMAM guidelines in Wajir County. These children are likely to have positive treatment outcomes and eventually improve the perception of the SFP program among the community members. Furthermore, it is also an indication of good health seeking behavior among the community and is also an indication that majority of the health workers adhere to the admission criteria of the IMAM guidelines.

Few late admissions of <-3SD (374) and early admissions >-2SD (781) were observed as shown in figure 17 below, indicating wrong admissions to MAM program since these are SAM cases and require monitoring and treatment in the OTP. The late admissions are likely to result in poor treatment outcomes and is considered a barrier in assessing coverage.
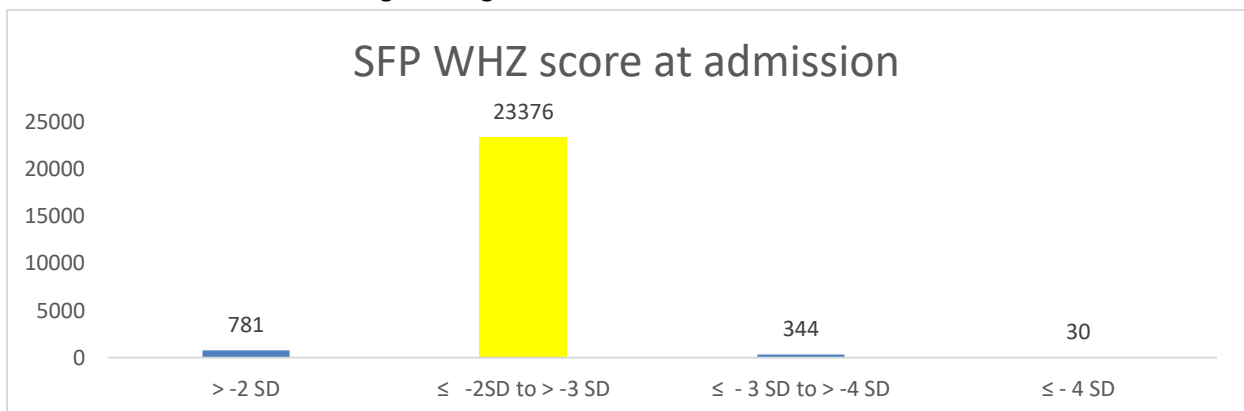
Figure 17: SFP WHZ score at admission

SFP MUAC at discharge Cured

Analysis was done for all children 6 to 59 months who were discharged from the SFP regardless of the admission criteria. As shown in figure 18, a median MUAC of 13cm observed from the analysis which is an indication that children are discharged after attaining discharge criteria and formal discharge by health workers as per the IMAM guideline. Few (271) cases of early discharges with MUAC <12.5 cm observed which indicates mismanagement and can be attributed to the use of both WHZ score and MUAC criteria in exit.

1074 late discharges of above 13.5cm up to 14.9 cm were observed which indicates very long stay in the program after attaining the cure measurements in the SFP program.
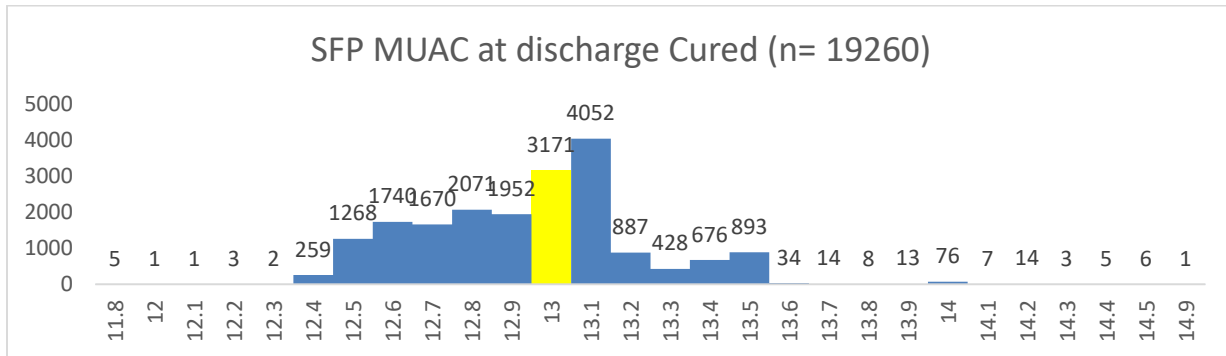
Figure 18: SFP MUAC at discharge Cured

SFP WHZ score at discharge

A total of 21,250 Children were discharged as Cured during the period of analysis. 80.7% (17169) of the discharges were done within recommended discharge criteria of IMAM guideline which recommends that SFP children are discharged on attaining >- 2SD based on the WHZ score as shown in figure 19. Such children are not likely to relapse to the program once discharged to the community. 4,310 cases early discharges with < -2SD were observed in the same period and is attributed to case mismanagement and also mix of the discharge criteria between WHZ and MUAC.
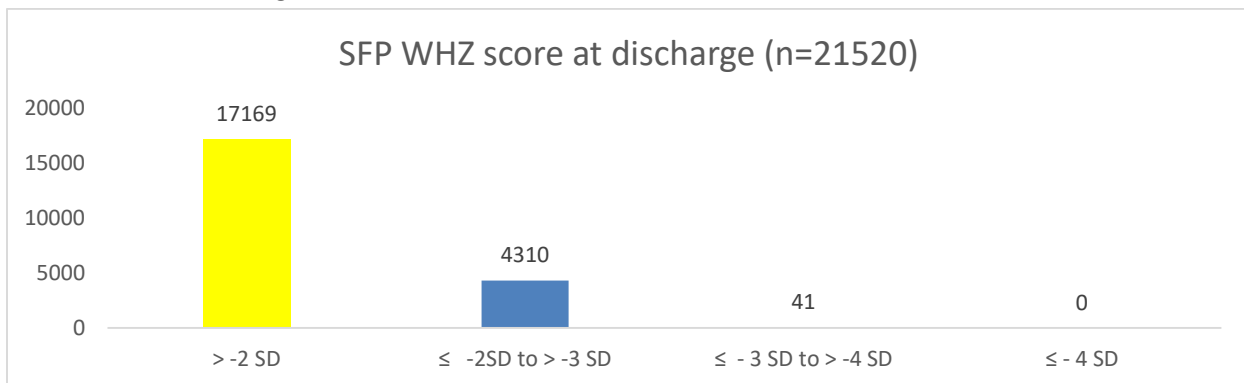
Figure 19: SFP WHZ score at discharge

SFP discharge outcomes

In the analysis period May 2022 to April 2023, the number of children 6-59 months discharged from SFP was 23,484 children. Out of this number, 96.6%(22,681) children were successfully treated and discharged as cured. In the same period, 20 deaths and 403 defaulters were recorded in SFP giving a death rate of 0.1% and a defaulter rate of 1.70%. There were 380 non-response cases (1.6% of discharges). Overall SFP

was meeting all the SPHERE minimum standards for cure rate >75%, defaulter rate of <15% and death rate of <3% as shown in figure 20 below. This is an indication of acceptability and accessibility of the SFP program and also implies better coverage.
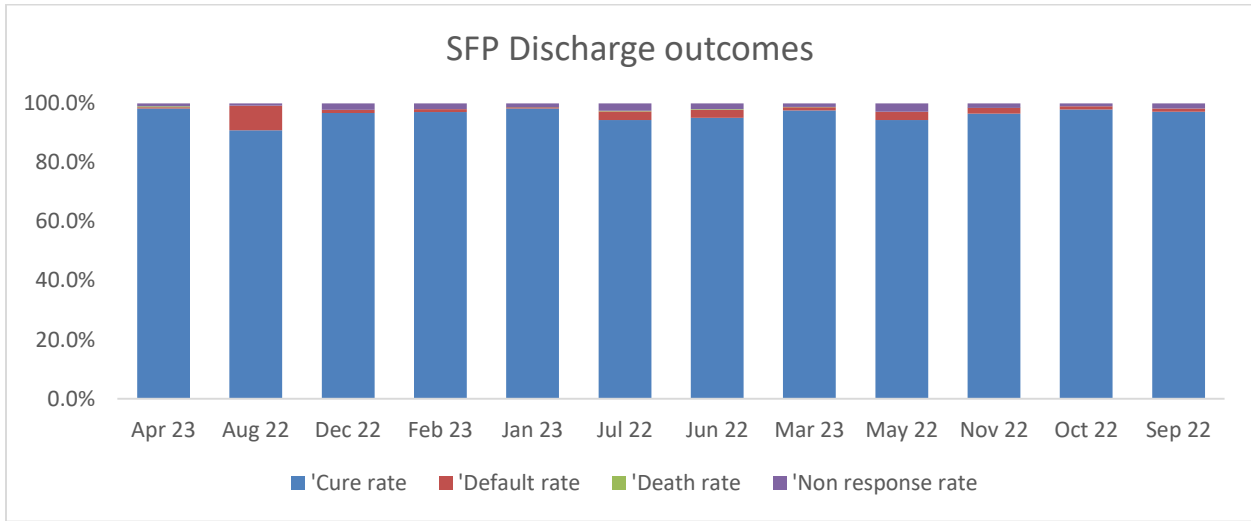
Figure 20:SFP Discharge outcomes

SFP Cured Length of stay

Figure 21 below indicates that a Median LOS at discharge was 12 weeks for the 22,819 Children who were discharged as cured from the SFP and is within the IMAM guideline criteria. Early discharges of less than 8 weeks and late discharges of above 12 weeks were observed. Too early and late discharges are attributed to a lack of following the IMAM Protocol by some health workers and also CHVs left to manage the IMAM program in some health facilities.
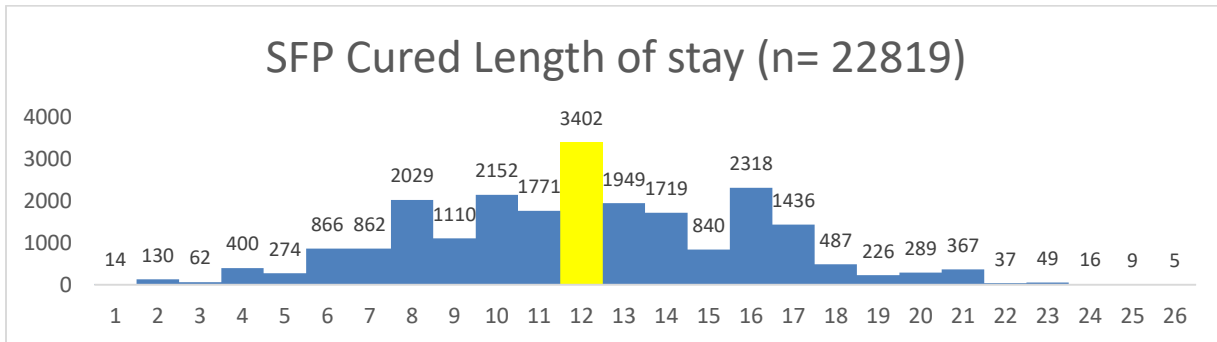
Figure 21: SFP Cured Length of stay

SFP MUAC at default

A total of 340 children exited the program as defaulters during the period of analysis. It was observed in figure 22 below, that the median MUAC at default was 12.4cm an indication of early default before criteria for discharge whilst still MAM. Poor adherence to IMAM program by the community is the main reason and require to be addressed as it could lead to low coverage of the SFP program.
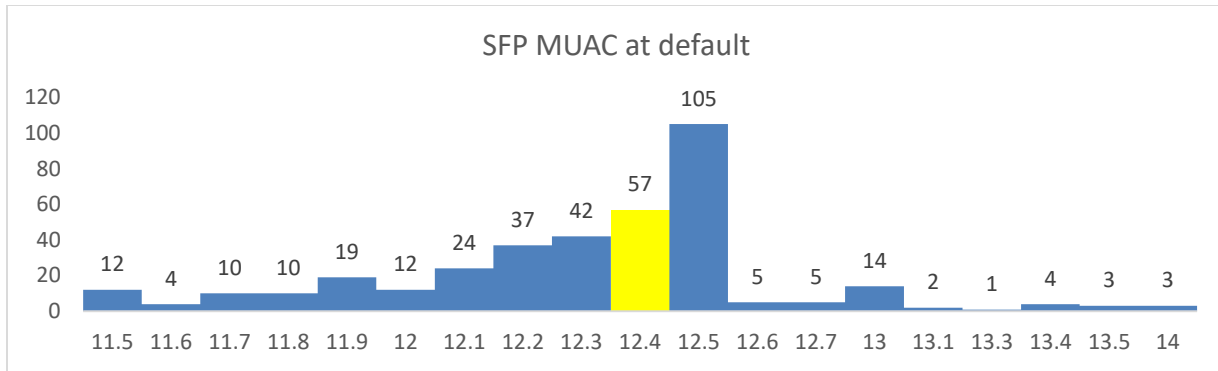
Figure 22:SFP MUAC at default

SFP WHZ score at default

As shown in figure 23, a significant number of children (340) was found to have defaulted whilst MAM. This is an indication of weak defaulter tracing mechanism and such children are likely to deteriorate to SAM. In the same analysis period 17 children defaulted while still SAM which could be an indication that they deteriorated while still in program or they were wrongly admitted into the SFP program due to gaps of the health workers in IMAM protocol adherence.
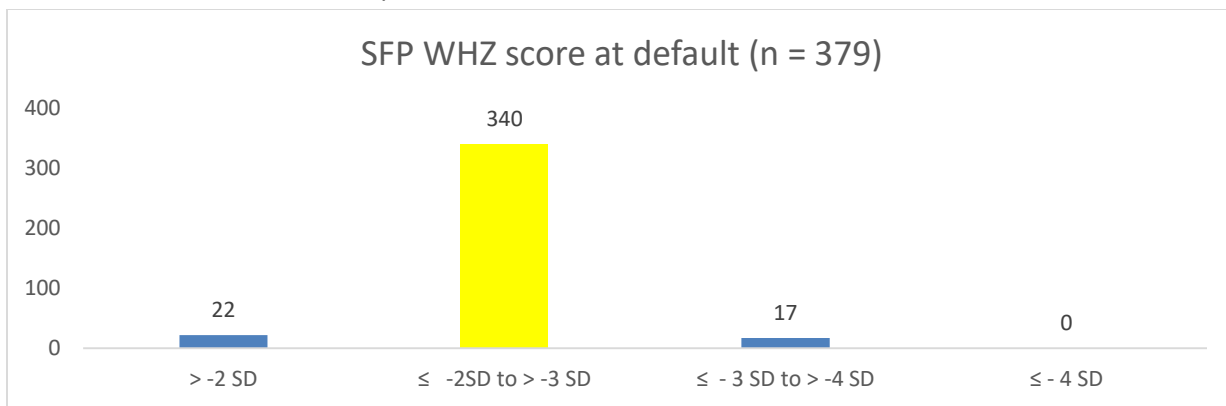
Figure 23:SFP WHZ score at default

SFP default Length of stay

A total of 424 defaulters were observed within the period of review with a median LOS of 4 weeks (Figure 24) which is an indication of early defaulting and this implies poor adherence to the IMAM program by the caregivers. Main reasons for default include in and out-migration due to the drought, travel to other towns, general elections fears in August 2022 and change of IMAM Service Delivery Points by some clients. Short LOS of ≤ 2 weeks observed in 33.7%(143) of the defaulters and can result in relapses thus affecting coverage. Few late discharges of beyond 12 weeks were also observed implying defaulting when they should have already cured in the SFP as 12 weeks is the recommended length of stay.
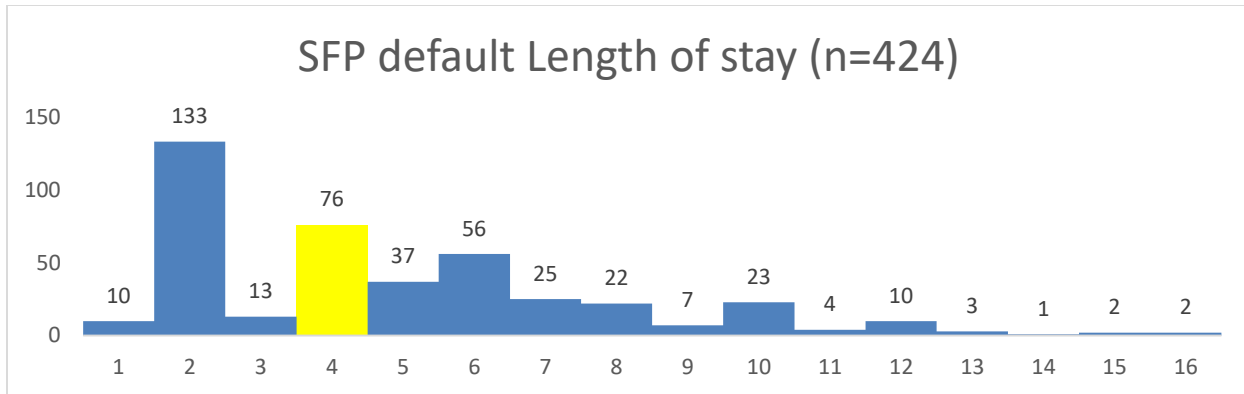
Figure 24: SFP default Length of stay

Nutrition commodities stock outs

Data was collected for IMAM commodities stock out in weeks for the period May 2022 to April 2023. Analysis on the stock outs based on the commodities from official pipelines for a period of 48 weeks indicated that Malaria Rapid test kits, Amoxicillin, ACT experienced stocks of more than 10 weeks while CSB, RUTF and RUSF experienced stock outs of between 6 to 7 weeks on average. Very minimal stock outs were experienced for Vitamin A, F75, F100 and Resomal as shown in the figure 25 below. Data from qualitative interviews with health workers indicated that in facilities where stock outs were experienced inter-facility transfer of commodities were facilitated through the office of the CNC and SCNCs and thus did not interfere with service delivery. The excellent management of IMAM commodities through excellent reporting, forecasting and quantification in Wajir county is thus a major factor in boosting coverage as availability of commodities plays a critical role in IMAM service delivery.
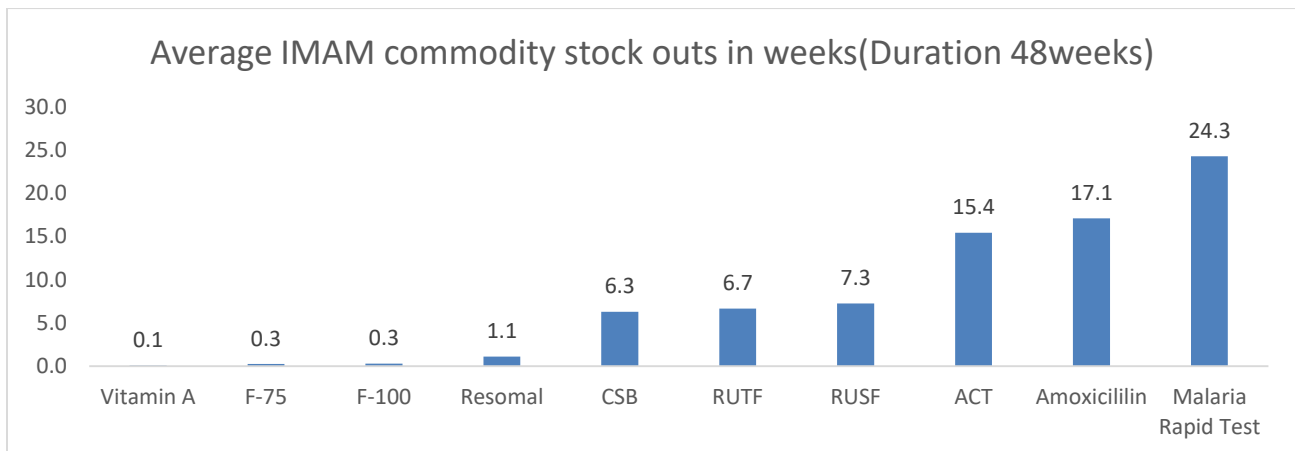
Figure 25: Average IMAM commodity stock outs in weeks

Figure 26 below shows the number of facilities that experienced stock outs for at least one week per commodity in the year of analysis
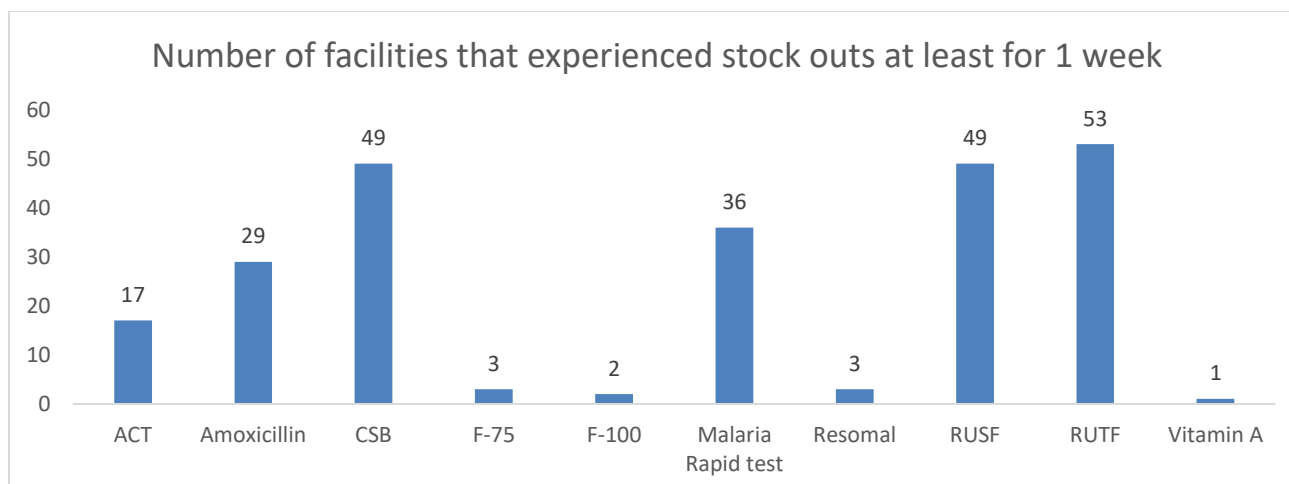
Figure 26: Number of facilities that experienced stock outs at least for 1 week

Stage 1: Qualitative Data

The key objective was to investigate the reasons for coverage success or failure and to understand the community dynamics which may influence and/or have impact on access to or acceptance of a IMAM programme. To achieve this Villages from the health facility catchment population were sampled based on level of the health facility and geographic location per sub county for representativeness. At least 10% of the villages were selected for each level making a total 29 village catchment populations. Annex 2, is the sampling framework for the villages sampled for the qualitative data collection. Sampling was purposive based on the findings of Quantitative data analysis on areas of High and Low Coverage

It was also expected that this was to explain the trends observed in the quantitative data by Investigating quantitative findings in order to try and understand why coverage is high or low and collecting information about what the community thinks about the programme and malnutrition and what barriers and boosters they experience

Qualitative data was collected using the different interview guides from the Kenya national coverage guideline organized in the following themes;

1. Health Seeking Behavior
2. Awareness about malnutrition and malnutrition signs
3. Awareness of IMAM Program Services
4. Availability and Accessibility of the service
5. Case identification Strategy and enrolment
6. Communication System with community
7. Appreciation of the Service
8. Referral/Transfer & Follow up strategy
9. Client Retention Strategy
10. Capacity of the SDP to deliver a quality service

The following methods for collecting qualitative data were employed including: Focus group discussions, Key informant interviews, semi-structured interviews, Observation and informal interviews.

The following key steps were followed during the data collection:

- A representative sample of SDPs was selected from the county based on the methodology and following the rule of thumb of 10% per level of health facility (Annex 2).
- Teams visited SDPs and villages in catchment areas for three days (11th to 13th May 2023) to conduct SSI, KIIs, Observations and FGDs
- Responses from community, Heath workers, NGOs and county health managers were compiled and analysed to outline the negative and positive factors.

Information was collected on the following topics as per the interview guides:

- Local understanding of malnutrition symptoms, causes, effects, solutions, stigmatisation
- Access and perceptions of SDPs distance, cost, quality and variety of care, admissions, interface, etc.
- knowledge, attitudes and perceptions of IMAM services
- volunteer networks; coverage, capacity, aptitude, activity frequency, planning & follow-up, etc
- Community sensitisation & screening

The following key informants were reached for interviews;

- Community members (M/F)
- Carers of malnourished children (M/F)
- Traditional doctors/Healers
- Religious leaders – Sheiks and Imams
- Local leaders (village chiefs)
- Community-based organisations
- Community health workers/volunteers
- Health workers
- County health representatives including Wajir County Referral Hospital Director
- NGOs and UN representatives.

Qualitative Data Analysis and Triangulation:

The Boosters, Barriers and Question (BBQ) tool was used in qualitative data analysis and synthesis. It is a simple tool, which allows the assessment team to organize key elements, representing factors with a positive or negative effect on access and coverage, in a table format and triangulate each by source and method. It helps the team to visualize the problematic and its recurrence in key informants' answers. In stage 2, the factors with the highest periodicity are weighted higher than elements mentioned occasionally.

The use of the BBQ tool was initiated on the first day of the community assessment, revised and modified each following day. BBQ listing was done on a daily basis in Wajir for villages sampled for day 1 and subsequently in Eldas and Habaswein in day 2 based on the movement plan.

Upon arrival of all teams from the field, all identified barriers and boosters were presented and discussed during a feedback session facilitated by the team leader. The BBQ being a very organic tool, demanded constant redrafting as teams added new data, combined it or discarded invalidated findings. Simultaneously, the team leader typed each barrier and booster in a computer, adding sources and methods every time they were mentioned by the teams. Owing to the fact that certain barriers and boosters are likely to be cited numerous times, a legend of barrier, booster methods and sources was developed as shown in *Table 1*. If, at the end of the day, certain barriers and boosters were mentioned only once, they were shifted to another section entitled Questions. These points were further investigated and kept in mind for the next day's data collection.

The survey team also decided to collect qualitative data(KIIs) from areas where data could not be collected during the quantitative data collection especially due to insecurity (Kutolo, Khorofarar, Konton, Mansa and Riba) and information gathered has been included in this report as barriers for IMAM service delivery. At the end of the qualitative data synthesis and analysis a list of barriers and boosters triangulated by source, method and location was available as shown in table 2 and 3 below;

Table 1: Legend for data sources and methods

Source		Method	
Partner Manager/Staff	**1**	Semi – structured interview	**A**
Health care worker	**2**	Focused group discussion	**B**
Hospital Manager/CHMT	**3**	Observation	**C**
Community Health Volunteer	**4**	Key informant interview	**D**
Sheikh/IMAM	**5**		
Village Elder	**6**		
Chief	**7**		
Caregiver OTP	**8**		
Caregiver SFP	**9**		
Caregiver defaulter OTP	**10**		
Traditional Healer	**11**		
Lay people	**12**		
Caregiver defaulter SFP	**13**		

Table 2: Description of boosters

	Boosters	Method/ Source	Description
1	Availability of Skilled health workers offering IMAM services	D2[9], C, D1, D3[3], D2	Majority of the health workers are trained on the IMAM and this has been possible through the support of the county and partners in the county. The capacity strengthening has been through formal trainings, OJT and support supervision.
2	Adequate human resource	D2[2], D3, B8	The county has 85 Nutritionists who are distributed across the health facilities with 14 of these are in the UHC program. This workforce is also reinforced at the service delivery point by the nutrition workforce from the other cadres including nurses, Cos, CHAS, PHOs and 3 pediatricians at Wajir County Referral Hospital.
3	Availability of nutrition commodities	D2[9], D1[2], A4[4], A5, A6, A7, A9, D3[2], B12, A5, B8[5], A4	Nutrition supplies and commodities was cited as a major contributor to a vibrant IMAM program and it was noted that the county has not experienced stock outs of RUTF, RUSF, F75, F100 and Resomal for prolonged periods. Program data analysis confirmed this explanations.
4	Awareness of IMAM program	B12, A6[6], A12, A4[6], D2[9], D3, A5[3] B12, A7[2], A11, B8[10]	Majority of those interviewed were aware of the IMAM program, the benefits of the program and the type of beneficiaries the program serves
5	Acceptance of program	B12, A5[5], A4[9], A7[3], A6[8], A12, D2[5], A11, A8, B8[13]	OTP program received a lot of approvals from mothers of beneficiaries and it was indicated that it is acceptable as they have seen the benefits.
6	Close proximity to service delivery point	B122, A4 ,B8[4]	Short distance to the SDP was cited as a major contributor for accessing IMAM services
7	Good health seeking behavior	B12, A5[5], D2[7], A4[7], C, A8, A9, B12, A7[3] A6[3], B8, B8[9]	Most of the community members and caregivers interviewed were aware of the benefits of the OTP/ IMAM program and that it was lifesaving. They further confirmed that they believe that it is effective in treating malnourished children. From the discussions some even gave examples of when their own children were malnourished and benefited from the program.
8	Good perception of the IMAM program	A5[3], B9, D2[3], A4[2], A12, A6, A7, D3, A8, B8[10]	Majority of the lay women and men believe that the IMAM program is beneficial to the community. Examples of children getting cured on admission to the program were mentioned
9	No stigma	A5[5], A4[5], D2, A7, B8[6]	Community members indicated that they are not ashamed to seek IMAM services when their children are sick and acceptance of the IMAM program is positive in the sampled villages

	Boosters	Method/ Source	Description
10	Availability social safety net linked to OTP	B8^2	The ongoing response has seen the introduction of cash transfer programs to cushion families from the adverse effects of the drought and acute malnutrition was used as criteria for registration. This was confirmed and reported by the CHVs, Caregivers of children in program and health workers.
11	Active community units	D2^{8}A4^8, A5^2, A6, A7^2, B8^4	Though the roll out of the community strategy is not functional health workers and community members cited the role of the CHVs in IMAM service delivery as very critical in defaulter tracing and health education sessions at the facility and at the community. One county official also indicated that a bill is currently at the county assembly for debate to ensure remuneration of the CHV as the county recognizes the important role they play at the community level. It was also highlighted that it was expected that the national government will complement the remuneration thus improving their morale.
12	Partner support(NGOs)	D2^2, A4, A6, A5, D12, B8^2	Partners in the county support nutrition activities through supplies, outreaches, mass screening and coordination. It was reported that currently through the support of NGOs and the UN agencies in the county the has seen a coverage of 95% of the mapped outreaches. Partners have also actively participated in the coordination activities in the county. Through the support of the partners the family MUAC approach has been rolled out in 4 of the six sub counties.
13	Active case finding	D2^6, A4^5, A6, A5^2 A7^2, A8, B8^3	Active case finding is ongoing through the CHVs and mass screenings. In the year under review three exhaustive mass screenings were conducted. This when triangulated with the admissions trends indicated that they were increase during the months when mass screening was conducted. Further an example of a CHV in Abakore was given whereby he visits all the villages within the facility every month for active case finding, health education sessions and referral when necessary by accompanying the clients to the facility.
14	Adherence to IMAM protocol	A4, A5, D2^3 , C ,B8^2	The large number of Nutritionist and other health workers has seen the health workers manage clients based on the IMAM program. This is also further enhanced by the regular support supervision and OJTs by the county and sub county health management teams.
15	Good defaulter tracing mechanism	D2^8, C, A4^7, A5, A7, D3 B10 ,B8^3	Defaulter tracing by CHVs was mentioned by health workers and examples cited in some facilities where some CHVs go to the villages to trace defaulters in close collaboration with the Health facility. Program data indicated that default rates were within the sphere standards in most facilities with exception of a few facilities.

	Boosters	Method/ Source	Description
16	Good working relations among the staff, CHV and community	D2[11], A4[11], A5, A9, A6, B8[2]	It was reported that some facilities through the Health facility committee have developed an effective team work by supporting the health in the organization of the IMAM program in their facilities
17	Availability of anthropometric tools	D2[5], A4[2],	Availability of Height boards, weighing scales and MUAC tapes in the health facilities and outreaches was cited as imparting positively on service delivery and thereby increasing coverage. The information came from health managers and workers
18	Referral by CHVs / good referral system	A4[3], D2[3], D3, A7, B8	Despite the reported lack of referral tools CHVs and Health workers have made significant efforts to refer Children in need of IMAM services to the relevant services including accompanying them to the facility to ensure that they do not miss out. It was reported that SC referrals were functioning in the 6 SC in the county in WCRH, Eldas, Buna, Habaswein, Tarbaj and Griftu.
19	Self-referral by use of family MUAC	A4[4], D1[2], D2[3], D3, B8[2]	Family MUAC utilization by mothers was mentioned as the main contributor of self-referrals that have been witnessed in the recent past.
20	Strong coordination	D1, D3	Through the leadership of the county department of health coordination at county and sub county level has seen improved organization and service delivery and ensured successful roll out of the outreach services thus reaching more children, periodic assessments of the nutrition program, surveillance and regular reporting.
21	Availability of outreach services	D1, D2, A4, D1, D1, D3, D2, A4, D2, A4, A5, A12, A4, D2, A8	Majority of the respondents indicated that outreaches have increased the reach of vulnerable children to the OTP program. This was triangulated by the program data available at the county where at the moment 95% of the mapped outreaches are supported through partnerships with NGOs and UN agencies to conduct two cycles every month.
22	Availability of essential drugs	C, D2[2], A4[2] B8[2]	Availability of essential drugs was mentioned by different respondents as a factor that communities consider as they seek OTP services.
23	Availability of feedback mechanism (Facility — community)	A6, B8	It was confirmed through community FGDs that some facilities have regular community barazas where awareness creation is conducted on the availability of IMAM services in the facilities.
24	Strong GMP (passive screening)	D2, C	Growth monitoring and promotion was sighted as one of the routes for enrollment into the IMAM program
25	Good leadership and governance	D1, A7[2], D2, D3	The county has political good will on Nutrition program from the leadership of the county including the Governor. The county

	Boosters	Method/ Source	Description
			department of health has also consistently supported and showed willingness to support IMAM implementation activities.
26	Good working and spacious environment at the MCH	A4, C	Through observation it was reported that some facilities have spacious working spaces dedicated for offering IMAM services
27	Active mother support group	D2, A4	M2M support groups are a source of peer to peer referral and was reported by Health workers in Wajir south especially in Abakore and Sabuli

Table 3:Description of Barriers

#	Barriers	Method /Source	Description
1	No active case finding	A4, D2[2], C, B8	Villages without CHVs at the community do not conduct active case find and thus lowers access of community members for IMAM services
2	No CHVs in the community	C, D2[2], D1, A6, B8	Functionality of Community units in some villages is not up to standard and thus affecting essential services like defaulter tracing and active case finding which would have increased coverage
3	Stock out of IMAM commodities	D2[11], A4[7], B12, A5, D1[4], A6, A7, A11 ,B8[11]	Periodic stock outs of commodities were reported as negatively impacting on the IMAM program. Program data however indicate that though stock outs have been experienced in most cases it has been for a short period(< 2 weeks) and has affected the SFP commodities.
4	Long distance to service delivery point	D2[5], B9, A8, D1[2], A5[2], A4[3], D3 B8[10]	It was reported that despite the over 95% Coverage of mapped outreaches some community members distance is still a barrier as some members have to travel for beyond 5 km to the service delivery point for IMAM services. It was further reported that 100% of outreaches are partner supported and when the current response ends distance will still be challenge in a number of villages
5	Stock out of essential drugs	D2[6], A6[2], A4[4] A6, A8 B8[6]	It was reported that community members have preference of seeking health services in facilities where they can get other services at the same service delivery point. Admissions to the IMAM program was noted to be low when stock outs of other essential drugs and vaccines.
6	Maternal workload	A5[3], D2[3], A9, B12, D1[2], A4, D3, B8[6],	Most mothers and care givers reported high workload as the main reason for missing appointments. This coupled with some women have more than 2 or more under-fives sometimes prevent women from taking their children for appointments as they have to balance between taking care of the other children and the malnourished child.

#	Barriers	Method/Source	Description
7	Health worker and CHV capacity gap/ non adherence to protocol	D2[7], D1[2], A4[2] B8	A few health workers and a number of CHVs have capacity challenges hence the wrong admission and discharge criteria observed in the IMAM registers. KII with some of the programme managers in the county indicated that about 10 Nutritionists have not been trained on the IMAM curriculum. Further it was noted that a refresher is needed based on need in the various service delivery point so as to address some of the gaps noted in the program data including the admission and discharge of clients based on wrong measurements and criteria.
8	Inadequate health care workers	D2[12], A6, D1[3], D3, A4[4] B8	Despite the effort of the county department of health of employing Health workers some facilities are managed by only one health worker and when they travel for meetings and trainings or go for leave the facilities are closed or left with the CHVs thus affecting access and coverage
9	Long waiting time during distribution	D2, A9, D3, A4, B8[8]	Scheduled distribution days, few health workers and lack of CHVs were cited as a major cause of the prolonged waiting time for IMAM service delivery and can discourage health seeking by the community members
10	Theft of nutrition commodities	D2[2], A4, D3	Theft of nutrition commodities were reported in some villages as affecting coverage as it will lead to stock outs and children in the program will miss on their rations. Incidence of theft has even seen the closure of 1 facility as the issue is being addressed by the provincial administration.
11	Scheduled distribution days	A5 B8,	It was reported that some facilities have specific days for offering IMAM services thus affecting service access for clients who would have liked to seek IMAM services in other days. Coupled with a few health workers who do not adhere to the weekly appointments as per the IMAM guideline and give More than one-week appointment treatment outcomes are affected. An example was given of a facility that does their distribution once in a month.
12	Sharing of nutrition commodities / ration	D2[11], A4[10] D1, B12, A5[2], A6 B8[2]	Sharing of nutrition commodities was reported to be common at the community level. It was reported that the practice happens at family as well as the community level given the 'sharing culture" of the community.
13	Social bothers	D2[7], A4[3], D3	Incidence of old mothers and caregivers with children demanding to be given Nutrition commodities despite not meeting the admission criteria were reported in some facilities. Some of the women even call the county leadership to try and influence the health workers to give them supplies
14	Insecurity and community conflict	D1[2], D2[4], A4,	Areas including Khorofarar, Kotulo, Konton, Mansa nomadic and Riba were reported to have experienced incidence of insecurity thus affecting service delivery at both the health facilities and outreaches. A community member also indicated that insecurity is a challenge and emphasized that "**Alshabab are the sun and**

#	Barriers	Method /Source	Description
			therefore are everywhere". Insecurity and conflict was also mentioned as leading to inconsistent outreach service delivery especially in Kutolo and Konton
15	Temporary closure of health facilities/ facility closed in the afternoon	A9, A8, A6, D1 B8[2]	Health workers sometimes attend meetings and trainings or go for leave and in facilities where there is only one health worker they close the facilities and
16	Poor referral system	A4[14] D2[10] D1, D3, B8	Through FGDs SSIs KIIs it was reported that though referrals happen in some facilities and communities it was difficult to track and establish its effectiveness given that most facilities and CU's in the county do not have the referral tools e.g. MOH 100
17	Lack of incentive for CHVs	A4[7], D2[5] A6, D1, D3, A7	It was also reported that though we have CUs in some health facilities and villages they are not fully functional and incentives to CHVs is not done especially where there is no partner support
18	Myths and beliefs on IMAM program	A6 ,A6, B12[2]	Interviews with community lay people indicated that some community members have beliefs which may negatively affect IMAM service delivery such as RUTF causing diarrhea, refusal of children length measurement relating it to death or removal of clothes
19	Poor communication on the IMAM program/ NO regular meetings	D2[3], A4[3], D3	Some community members reported that sometimes they do not have regular meetings with the facilities to be briefed on the IMAM services and delivery in the community.
20	Pastoral / nomadic lifestyle	D1, A5, A4[3], D2[6]	It was reported that due to the lifestyle of the communities in Wajir some beneficiaries default on the IMAM program due to out and in migration, movement to other towns and travels without informing the health worker and thereby being documented as defaulters as per the guideline. It was confirmed however that sometimes these beneficiaries are admitted in other health facilities. The in and out migration affected the outreaches of facilities like AJawa Health centre in Wajir North sub county.
21	Stigma of carers	D3 B8[2]	Stigma was reported in some communities as arising from the long stay in the IMAM program which could be due to other underlying medical conditions, neglect, sharing of commodities and sale of commodities. It was also reported that middle class members of community seek acute malnutrition services late as they do not want to be seen as their children having had such episodes.
22	Transport cost	A5 A4, A6, D2 B8[3]	It was reported and discussed that despite the OTP services being offered free in all the 102 IMAM sites some clients incur costs related to transport especially during referrals. Other costs mentioned include bed charges when admitted in the Stabilization centres.

#	Barriers	Method /Source	Description
23	Inadequate information on IMAM program	D1, A5, B12, D2, A8, A9 B8,	Interviews with the laymen indicated that some are not aware of the benefits of the IMAM program. This was however in some few communities
24	Poor health seeking behavior	A5, D1[3], D3	It was noted that in some villages mothers only take children to service delivery points for nutrition commodities and do not take care of their children as per the advice of the health workers thus the children stay long in the program.
25	Poor staff attitude	A7, A6	Poor staff attitude was reported by CHVs and community members as a negative factor that affects enrollment and completion of treatment of clients
26	Inadequate integrated health services within the facility - lab services	A7, D2, A5, A4, D1, B8[2]	It was reported that community members have preference of seeking health services in facilities where they can get other services at the same service delivery point. Admissions to the IMAM program was noted to be low when stock outs of other essential drugs and vaccines.
27	Poor attitude by the community towards the staff	A4, A6 B8	It was reported that some community members in some facilities e.g. Beramo have negative attitude to the health workers thus affecting the seeking of health services and IMAM services in these facilities.
28	High facility workload	D2[8], A4[4], A8,	Some level 2 facilities are managed by one nurse and due to the numbers seeking IMAM and other health services it was reported that sometimes they have a lot of workload. The high workload has led delegation of the IMAM program to be managed by CHVs who in most cases are not very conversant with the IMAM protocol. This was confirmed /reported by community members and by the health workers.
29	Availability of nutrition commodities in the local market	D1, B12	Some Elders, caregivers, CHVs, laypersons revealed that there was a lot of misuse of these commodities where some caregivers treated them as the only food for the children. It was also confirmed that RUTF and RUSF are in many shops especially in the urban areas of Wajir. Some community members were reported to be sharing commodities with other children in the households or neighbors and some even exchanging the commodities for money.
30	Poor / ineffective defaulter tracing mechanism	D2, A4	The lack of CHVs, non-motivation or non-functionality of Community units were cited as the main reasons for the lack of follow up for clients who missed their appointments in the OTP program
31	Inadequate support from CHMT/ SCHMT	A4, D2	It was reported by Health workers and programme managers that due to financial constraints sometimes the CHMT and SCHMT do not offer the much needed regular support supervision and on the job training for effective IMAM program implementation. It was further reported that even the recently concluded DQAs were rushed and therefore not effective enough as they had to visit three facilities per day.

STAGE 2: Hypothesis Testing and Verification

Hypothesis formulation

Using the information collected and analyzed in stage 1 the entire team explored the key findings and agreed to formulate a hypothesis based on the community health units and the family MUAC approach. The agreed hypothesis read as follows;

"Coverage is high (>60%) in villages with active Community units and family MUAC approach and coverage is low (<60%) in villages with no community units and no family MUAC approach."

Justification
- Community health units have been rolled out but remain inactive in some villages in Wajir County
- Family MUAC approach was cited as a major contributor for self-referrals in the FGDs and KIIs conducted in stage 1
- Coverage threshold fixed at 60% as SLEAC conducted in 2020 posted a OTP coverage of 78.5% and 65.4% for SFP.
- Outreach coverage stands at 95% when mapped outreaches are compared with the operationalized outreaches however the level consistency varies across the county.
- Furthermore, sustained response activities such as periodic exhaustive mass screening, cash transfer linked to IMAM households and outreaches have increased access of children to the IMAM program in the community.

Operational Definition of the Hypothesis Parameters:

The analysis team agreed on the following definitions of the hypothesis
- Active Community Unit – has at least a CHV who is involved in IMAM active case finding and defaulter tracing
- Family MUAC approach implementation – Villages where mothers are trained on family MUAC, issued with Family MUAC and reporting through the CHAs' and CHVs at least ones every month.

Small area survey organization

Based on the hypothesis the team purposively selected the following 14 villages based on their belief that they were either areas of satisfactory or unsatisfactory coverage as shown in the table 4 below

Table 4: Sampled villages for Small area survey

Satisfactory coverage villages	Unsatisfactory coverage villages
Barwaqo - Bulla Hewa	Afarshanle - Bulla anri
Elnoor - Bulla Marere	Beramo - Surayo
Lagboqol - Busbus	Dadadhalay - Bulla Bilal
Leheley - Hoos	Ingirir - Ingirir
Malkagufu Luku	Maumau - Bula hospital
Tulatula -Bula Township	Maygag - Bula Jimal
Wagberi -Maalim salat	Qoqar - Bulla School

The teams then embarked on two days data collection on (18th to 19th May 2023) to collect data for testing the hypothesis.

The objective of the small area survey was to visit selected villages and identify all cases based on the case definition of the survey, record data and interview caregivers. Since more than one criteria is used in admission into IMAM program in Wajir County (MUAC, Z-scores and/or bilateral oedema), the small area survey adopted all the three criteria in screening for malnutrition with the following case definition; **Children aged 6-59 months who are SAM or MAM (MUAC, Z-scores and/or bilateral oedema) or who are either enrolled or not enrolled in the OTP or SFP.**

Each team was provided with a MUAC tape, Weighing scale, Height boards, photos of malnourished SAM and MAM cases and packets of RUTF and RUSF.

On arrival at the village the Survey teams located the CHV, Introduced themselves and the objective of the Survey. In addition, they were required to establish the boundaries of the sampled village then Start the survey (House to house or door to door). Case finding method was **exhaustive** in selected community (i.e. survey teams aimed to find all SAM and MAM cases in the selected villages) and therefore all houses were visited in selected villages

At the household the survey teams:
1. Identified all children aged 6-59 months in household
2. Measured the MUACs, Weight and Height of children and checked for oedema
3. Recorded child status on case finding summary sheet in ODK
4. **Ask if the child is receiving treatment from OTP or SFP**

Anthropometric measurements for all children measured were recorded on ODK questionnaire/case finding summary sheet.

The Hypothesis Was Tested Using The Simplified LQAS Formula;

$d= \lfloor N*p/100 \rfloor$ **in Comparison With 60% threshold agreed based on the 2020 SLEAC assessment which showed that the county was above the 50% threshold for rural areas.**

Where
- **d** is the threshold value
- **n** is the SAM/MAM cases found
- **p** is the standard against which coverage is being evaluated

Small area Survey Results

The following criteria was used to determine the nutrition status of children and classify them accordingly

	MUAC measurement	Oedema	WHZ score
SAM	<115mm	+, ++, +++	<-3SD
MAM	115 to <125mm	None	-3SD to < -2SD
WELL NOURISHED	≥125mm	None	≥-2SD

Proof of attendance was by use of a packet of RUTF or RUSF and or confirmation by the Community health volunteers. **All non-covered cases were referred to the nearest HF** by issuing them with a referral slip and notification of the CHV of referrals made during data collection process for follow up.

Table 5 and 6 below summarizes the small area survey results

Table 5: Small Area Survey Results (OTP)

Purposively sampled villages	Characteristic (s)	No of SAM cases in program	No of SAM cases not in program	Total
High Coverage (7 villages)	Village **active Community units and family MUAC approach**	20	9	29
High coverage Area (7 Villages)	Program coverage Standard) p	60%	Number of SAM cases in program = 20 which is more than 17.	The hypothesis is confirmed
	Decision rule (d)	d= [29*0.6] = 17.4=17		
Low coverage (7 Villages)	Villages with no **active Community units and family MUAC approach**	11	8	19
Low Coverage (7 Villages)	Program coverage standard p	60%	Number of SAM cases in program is 8 which is less than 11	The hypothesis is confirmed
	Decision rule d	d= [19*0.6]=[11.4]=11		

Table 6:Small Area Survey Results (SFP)

Purposively sampled villages	Characteristic (s)	No of MAM cases in program	No of MAM cases not in program	Total
High Coverage (7 Villages)	Villages with **active Community units and family MUAC approach**	94	50	144
High coverage Area (7 villages)	Program coverage Standard) p	60%	Number of SAM cases in program = 94 which is more than 86.	The hypothesis is confirmed
	Decision rule (d)	d= [144*0.6] = 86.4=86		
Low coverage (7 Villages)	Villages with no **active Community units and family MUAC approach**	44	38	82
Low Coverage (7 villages)	Program coverage standard p	60%	Number of SAM cases in program is 44 which is less than 49	The hypothesis is confirmed
	Decision rule d	d= [82*0.60]=[49.2]=49		

Other findings from the small area survey were as follows;

Self-referral by use of family MUAC is the most common method for caregivers whose children are in the IMAM program as shown in figure 27 and 28 for both OTP and SFP.
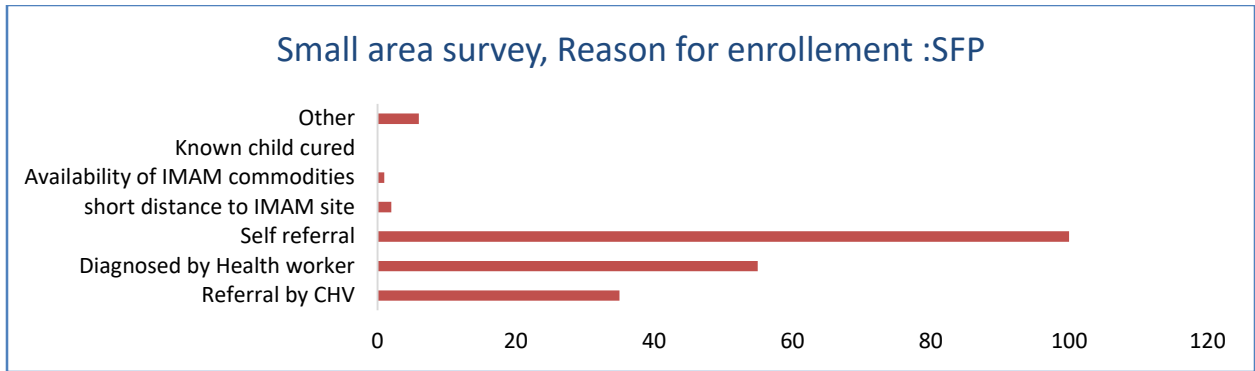
Figure 27: Small area survey, Reason for enrollment :SFP
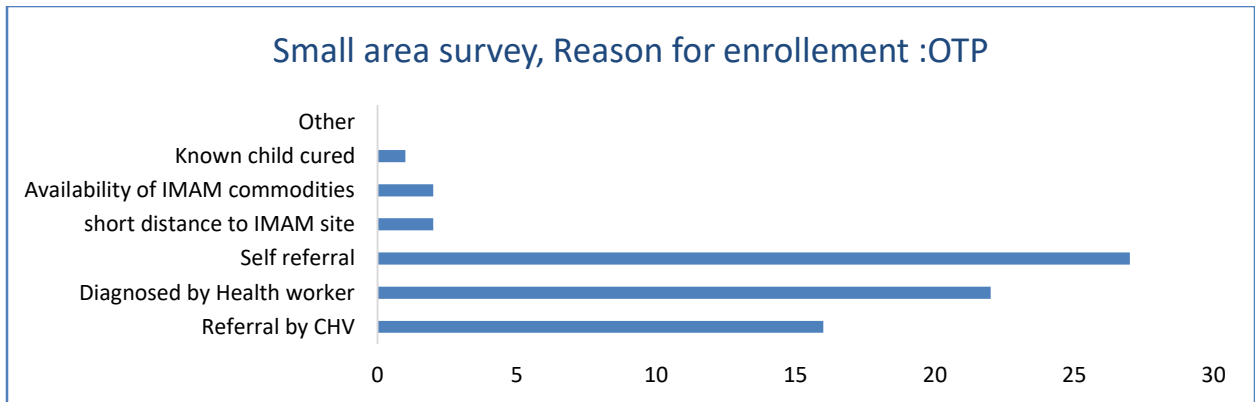
Figure 28: Small area survey, Reason for enrollment :OTP

PRIOR DEVELOPMENT

The analysis of routine program data (quantitative), qualitative data and the findings of small area survey provided a numerical representation of a belief about the program coverage (prior). Program barriers and boosters were organized and weighted based on the number of sources. Qualitative data was categorized as booster (positives) or a barrier (negatives) to the program. The prior mode was determined as an average of boosters (build up from 0%) and barriers (knockdowns from 100%) as shown in the following analysis techniques below;

Simple barriers & boosters

To determine the prior using the simple barriers and boosters' method, all the boosters and barriers were assumed to have the same impact on coverage and therefore were given a score of 1.

OTP

The total sum of the simple boosters was added to the lowest possible coverage (0 + 27) = 27%. The total sum of the simple barriers was subtracted from the highest possible coverage (100 − 33) = 67%. Prior mode from the simple scored boosters and barriers was (27% +67%)/2= 47%.

SFP

The total sum of the simple boosters was added to the lowest possible coverage (0 + 26) = 26%. The total sum of the simple barriers was subtracted from the highest possible coverage (100 − 32) = 68%. Prior mode from the simple scored boosters and barriers was (26% +68%)/2= 47%.

Weighted Barriers & Boosters

Once the final list of barriers and boosters was established and all sources, methods and demographic information noted in stage 1, the analysis team then proceeded with the weighting of individual elements in order to prioritize which are the most important barriers and boosters influencing coverage, which comes at the end of Stage 2.

The assessment team discussed and weighted each of the barriers and boosters concerning their perception on the contribution of each barrier or booster to the coverage of the IMAM program in Wajir County. To reach a score, team members discussed extensively before finally agreeing on the scores in (Table 7 and 8). The highest possible score assigned to a barrier or booster was 5 while 1 was the lowest score.

OTP

The total sum of the boosters was added to the lowest possible coverage (0 + 76) = 76%. The Total sum of the barriers was subtracted from the highest possible coverage (100–63) = 37%. The Prior mode from the weighted boosters and barriers was (76%+37%)/2=56.5%.

SFP

The total sum of the boosters was added to the lowest possible coverage (0 + 81) = 81%. The Total sum of the barriers was subtracted from the highest possible coverage (100–63) = 37%. The Prior mode from the weighted boosters and barriers was (81%+37%)/2=59%.

Tables 7 and 8 shows the BBQ with simple and weighted scores for all the boosters and barriers.

Table 7: Simple and Weighted boosters and barriers - OTP

#	Booster (Raise, improve, aid, add to)	Source/Method	Simple	wt %	#	Barrier (lower, hinder, reduce, block)	Source/Method	simple	wt %
	Booster range of weighting	0 - 3.7				**Barrier range of weighting**	0 - 3.2		
1	Availability of Skilled health workers offering IMAM services	D2^9, C, D1, D3^3, D2	1	3	1	No active case finding	A4, D2^2, C, B8	1	1.5
2	Adequate human resource	D2^2, D3, B8	1	2.5	2	No CHVs in the community	C, D2^2, D1, A6, B8	1	2.0
3	Availability of nutrition commodities	D2^9, D1^2, A4^4, A5, A6, A7, A9, D3^2, B12, A5, B8^5, A4	1	3.5	3	Stock out of IMAM commodities	D2^{11}, A4^7, B12, A5, D1^4, A6, A7, A11 ,B8^{11}	1	3.0
4	Awareness of IMAM program	B12, A6^6, A12, A4^6, D2^9, D3, A5^3 B12, A7^2, A11, B8^{10}	1	3.5	4	Long distance to service delivery point	D2^5, B9, A8, D1^2, A5^2, A4^3, D3 B8^{10}	1	2.5
5	Acceptance of program	B12, A5^5, A4^9, A7^3, A6^8, A12, D2^5, A11, A8, B8^{13}	1	3.5	5	Stock out of essential drugs	D2^6, A6^2, A4^4 A6, A8 B8^6	1	3.0
6	Close proximity to service delivery point	B122, A4 ,B8^4	1	2	6	Maternal workload	A5^3, D2^3, A9, B12, D1^2, A4, D3, B8^6,	1	3.0
7	Good health seeking behavior	B12, A5^5, D2^7, A4^7, C, A8, A9, B12, A7^3 A6^3, B8, B8^9	1	3	7	Health worker and CHV capacity gap/ non adherence to protocol	D2^7, D1^2, A4^2 B8	1	1.0
8	Good perception of the IMAM program	A5^3, B9, D2^3, A4^2, A12, A6, A7, D3, A8, B8^{10}	1	3.5	8	Inadequate health care workers	D2^{12}, A6, D1^3, D3, A4^4 B8	1	2.5
9	No stigma	A5^5, A4^5, D2, A7, B8^6	1	3	9	Long waiting time during distribution	D2, A9, D3, A4, B8^8	1	2.0
10	Availability social safety net linked to OTP	B8^2	1	3.5	10	Theft of nutrition commodities	D2^2, A4, D3	1	1.0
11	Active community units	D2^8 A4^8, A5^2, A6, A7^2, B8^4	1	3.5	11	Scheduled distribution days	A5 B8,	1	2.0

#	Booster (Raise, improve, aid, add to)	Source/Method	Simple	wt %	#	Barrier (lower, hinder, reduce, block)	Source/Method	simple	wt %
12	Partner support(NGOs)	$D2^2$, A4, A6, A5, D12, $B8^2$	1	2.5	12	Sharing of nutrition commodities / ration	$D2^{11}$, $A4^{10}$ D1, B12, $A5^2$, A6 $B8^2$	1	3.0
13	Active case finding	$D2^6$, $A4^5$, A6, $A5^2$ $A7^2$, A8, $B8^3$	1	2	13	Social bothers	$D2^7$, $A4^3$, D3	1	2.0
14	Adherence to Imam protocol	A4, A5, $D2^3$, C ,$B8^2$	1	2	14	Insecurity and community conflict	$D1^2$, $D2^4$, A4,	1	2.0
15	Good defaulter tracing mechanism	$D2^8$, C, $A4^7$, A5, A7, D3 B10 ,$B8^3$	1	2.5	15	Temporary closure of health facilities/ facility closed in the afternoon	A9, A8, A6, D1 $B8^2$	1	3.0
16	Good working relations among the staff, CHV and community	$D2^{11}$, $A4^{11}$, A5, A9, A6, $B8^2$	1	3	16	Poor referral system	$A4^{14}$ $D2^{10}$ D1, D3, B8	1	2.0
17	Availability of anthropometric tools	$D2^5$, $A4^2$,	1	3.5	17	Lack of incentive for CHVs	$A4^7$, $D2^5$ A6, D1, D3, A7	1	3.0
18	Referral by CHVs / good referral system	$A4^3$, $D2^3$, D3, A7, B8	1	3	18	Myths and beliefs on IMAM program	A6 ,A6, $B12^2$	1	1.0
19	Self-referral by use of family MUAC	$A4^4$, $D1^2$, $D2^3$, D3, $B8^2$	1	3	19	Poor communication on the IMAM program/ NO regular meetings	$D2^3$, $A4^3$, D3	1	1.5
20	Strong coordination	D1, D3	1	3	20	Pastoral / nomadic lifestyle	D1, A5, $A4^3$, $D2^6$	1	2.0
21	Availability of outreach services	D1, D2, A4, D1, D1, D3, D2, A4, D2, A4, A5, A12, A4, D2, A8	1	3.5	21	Stigma of carers --- long over stay, mothers embarrassed Stigma by the middle class on seeking care	D3 $B8^2$	1	2.0
22	Availability of essential drugs	C, $D2^2$, $A4^2$ $B8^2$	1	3.5	22	Transport cost	A5 A4, A6, D2 $B8^3$	1	2.0
23	Availability of feedback mechanism (Facility — community)	A6, B8	1	1	23	Inadequate information on IMAM program	D1, A5, B12, D2, A8, A9 B8,	1	1.0

#	Booster (Raise, improve, aid, add to)	Source/Method	Simple	wt %	#	Barrier (lower, hinder, reduce, block)	Source/Method	simple	wt %
24	Strong GMP (passive screening)	D2, C	1	3.5	24	Poor health seeking behavior	A5, D1[3], D3	1	1.0
25	Good leadership and governance	D1, A7[2], D2, D3	1	3.5	25	Poor staff attitude	A7, A6	1	3.0
26	Good working and spacious environment at the MCH	A4, C	1	1	26	Inadequate integrated health services within the facility - lab services	A7, D2, A5, A4, D1, B8[2]	1	2.5
27	Active mother support group	D2, A4	1	1	27	Poor attitude by the community towards the staff	A4, A6 B8	1	2.0
					28	High facility workload	D2[8], A4[4], A8,	1	2.0
					29	Availability of nutrition commodities in the local market	D1, B12	1	1.0
					30	Poor / ineffective defaulter tracing mechanism	D2, A4	1	2.5
					31	Inadequate support from CHMT/ SCHMT	A4, D2	1	1.0
Total Booster weighted			76.0		Total Barrier weighted			63.0	
Total Booster without weight			27.0		Total Barrier without weight			33.0	

Table 8:Simple and Weighted boosters and barriers - SFP

#	Booster (Raise, improve, aid, add to)	Method/Source	Simple	wt %		#	Barrier (lower, hinder, reduce, block)	Method/Source	simple	wt %
	Booster range of weighting	0 - 3.8					**Barrier range of weighting**	0 - 3.2		
1	Availability of Skilled health workers to offer IMAM services	D2[9], C, D1, D3[3], D2	1	**4**		1	No active case finding	A4, D2[2], C, B9	1	2.0

2	Adequate human resource	D2², D3, B9	1	**2**		2	No CHVs in the community	C, D2², D1, A6 B9	1	3.0
3	Availability of nutrition commodities	D2⁹, D1², A4⁴, A5, A6, A7, A9, D3², B12, A5 B9⁵	1	**4**		3	Stock out of IMAM commodities	D2¹¹, A4⁷, B12, A5, D1⁴, A6, A7, A11, B9¹³, A4², D3, D2, A4	1	3.0
4	Awareness of IMAM program	B12, A6⁶, A12, A4⁶, D2⁹, D3, A5³ B12, A7², A11, B9¹⁰	1	**4**		4	Long distance to service delivery point	D2⁵, B9, A8, D12, A5**²**, A4³, D3 B9⁹	1	2.0
5	Acceptance of the SFP program	B12, A5⁵, A4⁹, A7³, A6⁸, A12, D2⁵, A11, A8, B9¹⁵	1	**4**		5	Stock out of essential drugs	D2⁶, A6², A4⁴ A6, A8 B9⁶	1	3.0
6	Close proximity to service delivery point	B12², A4 B9⁴	1	**3**		6	Maternal workload	A5³, D2³, A9, B12, D12, A4, D3, B9⁵	1	3.0
7	Good health seeking behavior	B12, A5⁵, D2⁷, A4⁷, C, A8, A9, B12, A7³ A6³, B8 B9¹¹	1	**3**		7	Health worker and CHV capacity gap/ non adherence to protocol	D2⁷, D12, A4² B9	1	3.0
8	Good perception of the IMAM program	A5, B9, D2, A4, A5, D2, A12, A5, A6, A4, A7, D3, D2, A8 B9⁹	1	**3**		8	Inadequate health care workers	D2¹², A6, D13, D3, A4⁴ B9	1	2.0
9	No stigma	A5, A5, A5, A4, A4, D2, A4, A5, A7, A4, A4 B9⁶	1	**4**		9	Long waiting time during distribution	D2, A9, D3, A4, B9⁷	1	2.0
10	Active community units	B3, B9	1	**2**		10	Theft of nutrition commodities	D2², A4, D3	1	1.0
11	Partner support	D2², A4, A6, A5, D1², B9²	1	**4**		11	Scheduled distribution days	A5 B9,	1	1.0
12	Active case finding	D2⁶, A4⁵, A6, A5² A7², A8 B9⁴	1	**2.5**		12	Sharing of nutrition commodities / ration	D2¹¹, A4¹⁰ D1, B12, A5², A6 B9²	1	3.0
13	Adherence to IMAM protocol	A4, A5, D2³ , C B9²	1	**3**		13	Social bothers	D2⁷, A4³, D3	1	1.0
14	Good defaulter tracing mechanism	D2⁸, C, A4⁷, A5, A7 D3 B10 B9³	1	**2**		14	Insecurity and community conflict	D12, D24, A4,	1	3.0
15	Good working relations among the staff, CHV and community	D2¹¹, A4¹¹, A5, A9, A6 B9³	1	**3**		15	Temporary closure of health facilities/ facility closed in the afternoon	A9, A8, A6, D1 B9	1	2.0
16	Availability of anthropometric tools	D2⁵, A4², C, B9²	1	**4**		16	Poor referral system	A4¹⁴ D2¹⁰ D1, D3,	1	2.0
17	Referral by CHVs / good referral system	A4³, D2³, D3, A7	1	**3**		17	Lack of incentive for CHVs	A4⁷, D2⁵ A6, D1, D3, A7	1	3.0

18	Self-referral by use of family MUAC	A4[4], D1[2], D2[3], D3 B9[3]	1	**3**		18	Poor communication on the IMAM program/ NO regular meetings	D2[3], A4[3], D3	1	1.0
19	Strong coordination	D1, D3	1	**2.5**		19	Pastoral / nomadic lifestyle	D1, A5, A4[3], D2[6]	1	2.0
20	Availability of outreach services	D1, D2, A4, D1, D1, D3, D2, A4, D2, A4, A5, A12, A4, D2	1	**4**		20	Stigma of carers --- long over stay, mothers embarrassed	D3 B9	1	1.0
21	Availability of essential drugs	C, D2[2], A4[2] B9[2]	1	**4**		21	Transport cost	A5, A4, A6, D2 B9[3]	1	1.0
22	Availability of feedback mechanism (Facility — community)	A6 B9	1	**2**		22	Inadequate information on IMAM program	D1, A5, B12, D2, A8, A9 B9	1	1.0
23	Strong GMP (passive screening)	D2, C,	1	**4**		23	Poor health seeking behavior	A5, D13, D3	1	3.0
24	Good leadership and governance	D1, A7[2], D2, D3	1	**3**		24	Child care neglect	A5 B9	1	1.5
25	Good working and spacious environment at the MCH	A4, C	1	**2**		25	Poor staff attitude	A7, A6	1	3.0
26	Active mother support group	D2, A4	1	**2**		26	Inadequate integrated health services within the facility - lab services	A7, D2, A5, A4, D1, B9[2]	1	2.0
						27	Poor attitude by the community towards the staff	A4, A6	1	3.0
						28	High facility workload	D2[8], A4[4], A8,	1	2.0
						29	Availability of nutrition commodities in the local market	D1, B12	1	1.0
						30	Poor / ineffective defaulter tracing mechanism	D2, A4	1	1.5
						31	Inadequate support from CHMT/ SCHMT	A4, D2	1	1.0
Total Booster weighted			81.0			Total Barrier weighted			63.0	
Total Booster without weight			26.0			Total Barrier without weight			32.0	

Concept Maps

Using the *Gitmind software* a graphical data analysis technique, during a participatory working group session, the assessment team worked on a concept map to analyze graphically the logical positive and negative relationships between findings (Barriers and Boosters) from stage 1 separately for the OTP program and SFP Program.

OTP Concept Map

From the boosters and barriers of the OTP Program obtained and synthesized in the qualitative data, 44 Positive and 35 negative connections were identified which would affect OTP coverage. The corresponding booster positive links (44) was added to the minimum possible coverage (0%) while the barrier negative links (35) was subtracted from the maximum possible coverage (100%), see figure 29 below. The average between these two values was then calculated to obtain a prior mode. ((0+44) =44, (100-35) = 65) therefore the prior obtained was [(44+65)/2] = **54.5**
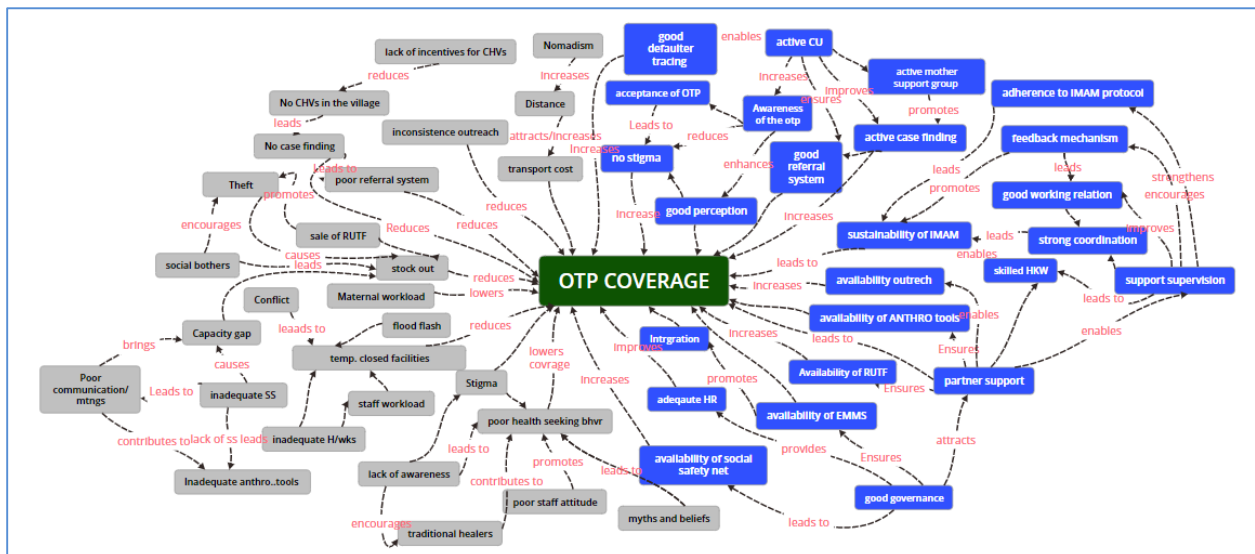
Figure 29: OTP Concept Map

SFP concept Map

In SFP 28 positive connections & 34 negative connections were observed which could have an impact on the IMAM coverage. The corresponding booster positive links (28) was added to the minimum possible coverage (0%) while the barrier negative links (34) was subtracted from the maximum possible coverage (100%), see figure 30 below. The average between these two values was then calculated to obtain a prior mode. ((0+28) =28, (100-34) = 66) therefore the prior obtained was [(28+66)/2] = **47**

Figure 30: SFP concept map

Histogram

Based on the qualitative, quantitative data in stage 1 and data collected in small area survey histogram was developed for both OTP and SFP program. The analysis team developed the histogram prior based on the belief of where the coverage stands "best" and developed from an average of low and high coverage beliefs for the boosters and barriers from the SQUEAC analysts for OTP and SFP as shown in table 9 below;

Table 9: OTP and SFP histogram beliefs

	SAM HISTOGRAM		MAM HISTOGRAM	
	BOOSTER	BARRIER	BOOSTER	BARRIER
AVERAGE HISTOGRAM	65	42	59.8	44
Analyst 1	67	65	59	61
Analyst 2	48	55	40	60
Analyst 3	80	20	75	24
Analyst 4	70	30	60	40
Analyst 5	60	40	65	35

Overall PRIOR Mode

Four Methods were used to determine and develop the prior mode. They included;

1. **Simple barriers & boosters:** Listing of Boosters and Barriers arising/derived from triangulated evidence in Stage One
2. **Weighted Barriers & Boosters:** Weights of BBs derived from well-triangulated evidence in stages 1 & 2
3. **Histogram:** software generated with Credible coverage limits derived from triangulated evidence by five (5) analysis teams
4. **Concept Map Notes: Listing of the positive and negative contributors to IMAM coverage**

An Average of the four (4) methods was done to estimate the prior.

The overall PRIOR mode for OTP and SFP respectively were 54.9 and 52.7 as shown in table 10 and 11.

Table 10: OTP prior estimation

SAM PRIOR ESTIMATION					
METHODS	**Boosters total**	**Barriers total**		**Formulae**	**Prior mode**
Simple barrier and booster prior mode	27	33		(BST + (100-BRR)) / 2	47.0
Weighted Barrier and booster prior mode	76	63		(BST + (100-BRR)) / 2	56.5
Concept map prior mode	44	35		(BST + (100-BRR)) / 2	54.5
Histogram	65	42		(BST + (100-BRR)) / 2	61.5
PRIOR = (47+56.5+54.5+61.5)/4 =					**54.9**

Table 11: SFP prior estimation

MAM PRIOR ESTIMATION					
METHODS	**Boosters total**	**Barriers total**		**Formulae**	**Prior mode**
Simple barrier and booster prior mode	26	32		(BST + (100-BRR)) / 2	47.0
Weighted Barrier and booster prior mode	81	63		(BST + (100-BRR)) / 2	59.0
Concept map prior mode	28	34		(BST + (100-BRR)) / 2	47.0
Histogram	59.8	44		(BST + (100-BRR)) / 2	57.9
PRIOR = (47+59+47+57.9)/4					**52.7**

The Bayes calculator was used to develop both OTP and SFP Bayes prior plots and the α and β shape parameters were obtained from Bayes Calculator as explained below;

The above information was fed in Bayes SQUEAC Coverage Estimate Calculator (version 3.01) to come up with statistically plotted Bayes plots. This was done by adjusting the α and the ß values of Bayes calculator until the prior mode (54.9 and 52.7 for OTP and SFP respectively) were achieved.

Figures 31 and 32 below illustrates the Bayes plots for SFP and OTP.

The plots are graphical representation of estimated coverages based on the information so far collected in stage 1 and 2. An uncertainty of ±20% was considered. The prior alpha and beta values were calculated

at 17.0 and 14.0 for OTP and the prior alpha and beta values for SFP were 16.4 and 14.7. With the precision set at ±10% the software then automatically calculated sample size, 59 each for   SAM and MAM cases to be found in survey regardless whether they are in the IMAM program or not.
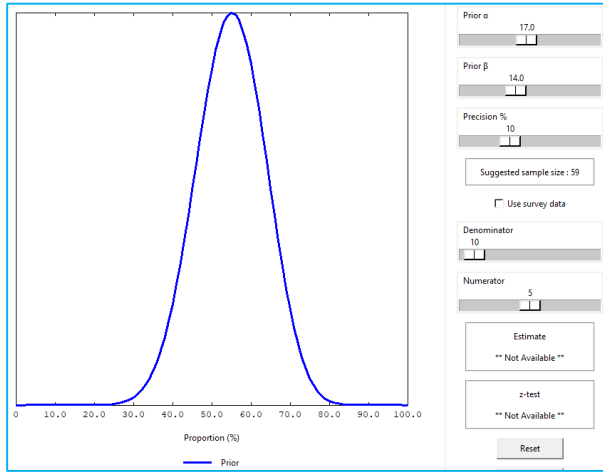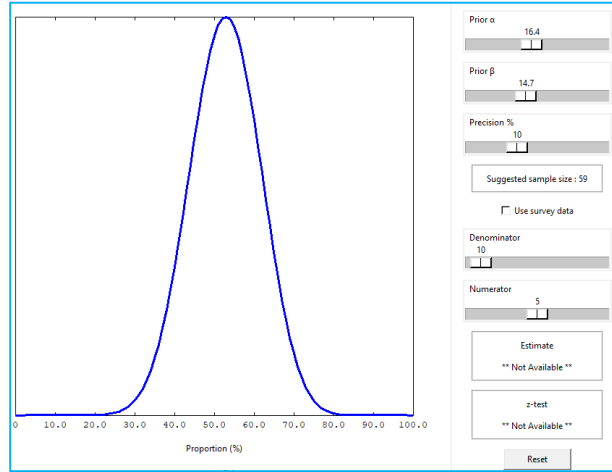

Figure 31: OTP Bayes plot

Figure 32: SFP Bayes plot

STAGE 3: Coverage Estimate

Calculating the number of villages to Visit

According to the Bayesian calculator, the sample size was 59 cases for both OTP and SFP. Since it was logistically impossible to search the cases in the entire County, it was prudent to randomly sample a number of villages where such cases were to be found. The number of villages was dependent on the number of cases, average population per village, proportion of children 6- 59 months in the population as well as the current estimate of SAM prevalence by MUAC as summarized in the formula below.

The number of villages needed to be visited to reach the required SAM/MAM sample size (calculated through the Prior plot) were calculated using the formula below;

$$\cdot \quad \boldsymbol{n\ villages} = \left[\frac{n}{average\ village\ population\ all\ ages \times \frac{percentage\ of\ population\ 6-59\ months}{100} \times \frac{SAM or\ MAM\ prevalence}{100}} \right]$$

Where

- n= sample size (SAM/MAM)
- Average village population = 1331, *(County Population – 777,111/Total villages - 584)*
- % children 6- 59 months = 15.2%
- % SAM Prevalence by MUAC =0.7% (0.3 – 1.7%) *(Jan 2023 SMART Survey)*
- % MAM Prevalence by MUAC=3.7% (2.3 -6%) *(Jan 2023 SMART Survey)*

SAM prevalence by MUAC was used to determine sample size calculation for this assessment. SAM prevalence by MUAC (0.4%) was preferred over SAM by WHZ (2.5%) since a low estimate (SAM) helps ensure that the survey was able to achieve the target sample size. A value midway between the point estimate and the lower 95% confidence limit for SAM prevalence **((0.3 – 1.7%)÷2 = 0.7%)** was used for the computation. 29 villages and 6 villages was calculated respectively for SAM and MAM thus the Wide Area Survey in Wajir County was conducted in **29 villages since OTP had the largest village sample.**

Spatially stratified systematic sampling was used in sampling villages for the wide area survey. Stratification was done by Sub County, where it entailed systematic selection of villages from a complete list of updated villages (Annex 3), with the insecure and inaccessible villages being omitted from the sampling frame.

Sampling Interval =Total no. of villages in the County (584)

no. of villages to be assessed (29)

=20

After the calculation of the sampling interval, the first village to be sampled was randomly chosen between one (1) and the sampling interval (20). Then the sampling interval was applied until the end of the list. Both Active Adaptive and 'Door to Door' case finding for children aged 6 to 59 months was applied because SAM prevalence in Wajir County is low hence the need for thorough case finding.

Wide area survey data collection

The objective of the data collection was to visit selected villages and identify all cases based on the case definition of the survey, record data and interview care givers. Since more than one criteria is used in admission into IMAM program in Wajir County (MUAC, Z-scores and/or bilateral oedema), the wide area survey adopted all the three criteria in screening for malnutrition with the following case definition;

Children aged 6-59 months who are SAM or MAM (based on MUAC, Z-scores and/or bilateral oedema**) or who are either enrolled or not enrolled in the OTP or SFP**

Each team was provided with a MUAC tape, Weighing scale, Height board, photos of malnourished SAM and MAM cases and packets of RUTF and RUSF.

On arrival at the village the Survey teams located the CHV, Introduced themselves and the objective of the Survey. In addition, they also established the boundaries of the sampled village then started the survey (House to house or door to door). Case finding method was **exhaustive** in selected villages (i.e. survey teams aimed to find all SAM and MAM cases in the villages sampled) and therefore all houses were visited in the selected villages

At the household the survey teams:

1. Identified all children aged 6-59 months in household
2. Measured the MUACs, Weight and Height of children and checked for bilateral pitting oedema
3. Recorded child status on case finding summary sheet in ODK
4. **Asked if the child is receiving treatment from OTP or SFP**

Anthropometric measurements for all children measured were recorded on ODK questionnaire/case finding summary sheet.

The following criteria was used to determine the nutrition status of children and classify them accordingly

	MUAC measurement	**Oedema**	**WHZ score**
SAM	<115mm	+, ++, +++	<-3SD
MAM	115 to <125mm	None	-3SD to < -2SD
WELL NOURISHED	≥125mm	None	≥-2SD

Proof of attendance was by use of a packet of RUTF or RUSF and/ or confirmation by the Community health volunteers. **All non-covered cases were referred to the nearest HF** by issuing them with a referral slip and notification of the CHV of referrals made during data collection process for follow up. Data collection in the 29 sampled villages was done for 5 Days from the 2nd to 6th June 2023 by 7 teams each with 2 measurers and a CHV.

Wide area survey results and analysis

To complement the Prior information, additional data on coverage was collected during a wide area survey that was conducted in 29 villages. A total of 1207 children 6 to 59 months were screened out which the following results were obtained a total of 82 SAM cases and 350 MAM cases were identified as shown in *Annex 3*.

OTP Coverage estimate

The summary of the data collected were as follows for SAM. Recovering cases not in program **Rin** was calculated from the Bayes toolSQL as below;

SAM Cases	Number
SAM cases in program (Cin)	46
SAM Cases not in program Cout	36
Recovering cases in program Rin	19

Using a mean length of untreated episode 7.5 and mean of length of treated episodes 2.5 (Calculated from LOS of 10 weeks i.e 10/4), current cases in program 46, current cases NOT in program 36 and recovering cases in program 19; the Bayesian SQUEAC calculator calculated the numerator and the

denominator for the Single coverage estimator at 65 and 105 respectively. The recovering SAM cases not in the program was estimated to be 4 as shown in the *figure 33* below.

Figure 33: OTP Rout estimate

For OTP single coverage estimation, the denominator 100 (46+36+19+4 - current SAM in program + current SAM cases not in program. + recovering cases + recovering cases not in program.), and numerator 65 (46+19, current SAM cases in program + recovering cases) was inserted to Bayesian SQUEAC calculator while same Alpha and Beta values (α 17.0 and β 14.0) and precision ±10% was used from the pre-set 'Prior'.

The Bayesian-Software estimated single coverage of **60.4%(CI 95% :52.1 − 68.5). z= -0.66, p= 0.5116**. Bayesian calculations require a certain extent of coherence between the prior estimation and the results found in the Wide Area Survey. The conjugate analysis does not present any conflict between the prior and the likelihood. The prior is in accordance with the likelihood since the curves overlap as shown in the *figure 34* below;
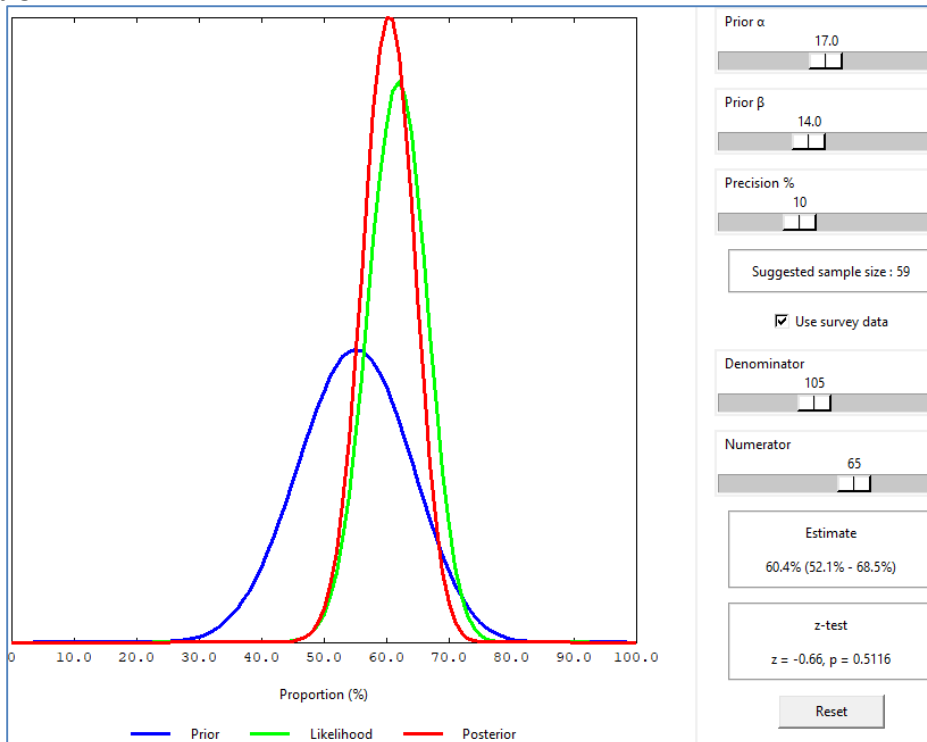
Figure 34: OTP Coverage estimate Bayes plot

SFP coverage estimate

The summary of the data collected were as follows for MAM. Recovering cases not in program was calculated from the Bayes toolSQL as below;

MAM Cases	Number
MAM cases in in program (Cin)	218
MAM cases not in program (Cout)	132
Recovering cases in program (Rin	70

Using a mean length of untreated episode 7.5 and mean of length of treated episodes 3.0(Calculated from LOS of 12 weeks i.e. 12/4), current cases in program 218, current cases NOT in program 132 and recovering cases in program 70; the Bayesian SQUEAC calculator calculated the numerator and the denominator for the Single coverage estimator at 309 and 476 respectively. The recovering MAM cases not in the program was estimated to be 16 as shown in the *figure 35* below.
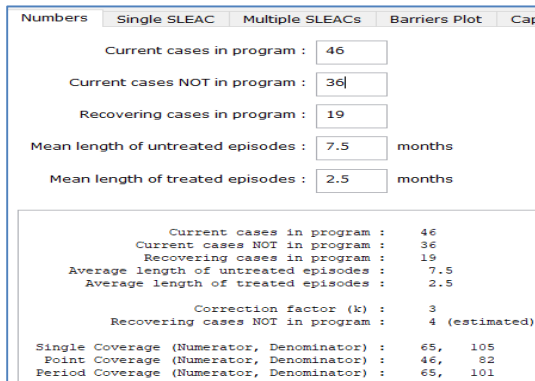

Figure 35: SFP Rout estimate

For SFP single coverage estimation the denominator 436 (218+132+70+16 - current MAM in program + current MAM cases not in program. + recovering cases + recovering cases not in program.), and numerator 288 (218 + 70, current SAM cases in program + recovering cases) was calculated manually as the numerator and denominator exceed the maximum of 256 in the Bayes calculator.

The estimated single coverage for SFP in Wajir was calculated to be **66.1%(CI 95% :61.6 – 70.5)**. Bayesian calculations require a certain extent of coherence between the prior estimation and the results found in the Wide Area Survey. The conjugate analysis does not present any conflict between the prior and the likelihood.

The Point coverage estimate was calculated using the formula

$$Point\ coverage\ = \frac{Cin}{Cin + Cout + Rin} = \frac{218}{218 + 132 + 70}$$

was at = **62.3%**

Period coverage estimate was calculated using the formula

$$Period\ coverage\ = \frac{Cin + Rin}{Cin + Cout + Rin} = \frac{218 + 70}{218 + 132 + 70}$$

was **68.6%**

Coverage Monitoring Network recommends that the single coverage estimate should be quite close to the average (mid-point) of the point and period coverage estimates which is the case with our results above.

Point coverage reflects the ability of a program to **find and recruit cases**. The point coverage estimator **does not account for recovering cases** and so does not directly reflect the program's ability to retain cases from admission to cure.

Period coverage reflects the ability of a program **to find, recruit, and retain cases**. The period coverage estimator does directly reflect the program's ability to retain cases from admission to cure but tends to overestimate program performance because the denominator does not include recovering cases that are not in the program.

Effectiveness coverage

The Effectiveness of Timely case-finding and recruitment indicator was estimated as shown in the formula and table below;

$$Effectiveness\ Coverage = \frac{Cin}{Cin\ +\ Cout}$$

Table 12: Effectiveness coverage

	SAM Cases (OTP Programme)	MAM Cases (SFP Programme)
C-in Programme	46	218
C-out of Programme	36	132
Effectiveness Coverage - Numerator	46	218
Effectiveness Coverage - Denominator	82	350
EFFECTIVENESS COVERAGE ESTIMATE (%)	55.9%	62.3%

Met Need

The met need for the OTP and SFP was calculated using the formulae and table below using the Single Estimate Coverage and the average Cure rate from the outcome data for the period May 2022 and April 2023 in Laisamis sub county.

$$Met\ Need = Single\ estimate\ Coverage\ \times Average\ Cure\ rate$$

Table 13: Met need calculation

	OTP Program	SFP Program
Single coverage Estimate =	60.4%	66.1%
Average Cure rate (May 2022 – April 2023) =	96.2%	96.6%%
Therefore, Met Need =	=0.604*0.962 = 0.5810 =58.1%	=0.661*0.966 =0.6385 =63.9%

The met need for IMAM program in Wajir County is above the sphere standard of 50% for rural areas.

Other findings of the wide area survey

The wide area survey sought to find out the reasons for enrollment for clients who were in the IMAM program and some of the reasons is as shown in the *Figure 37* below;
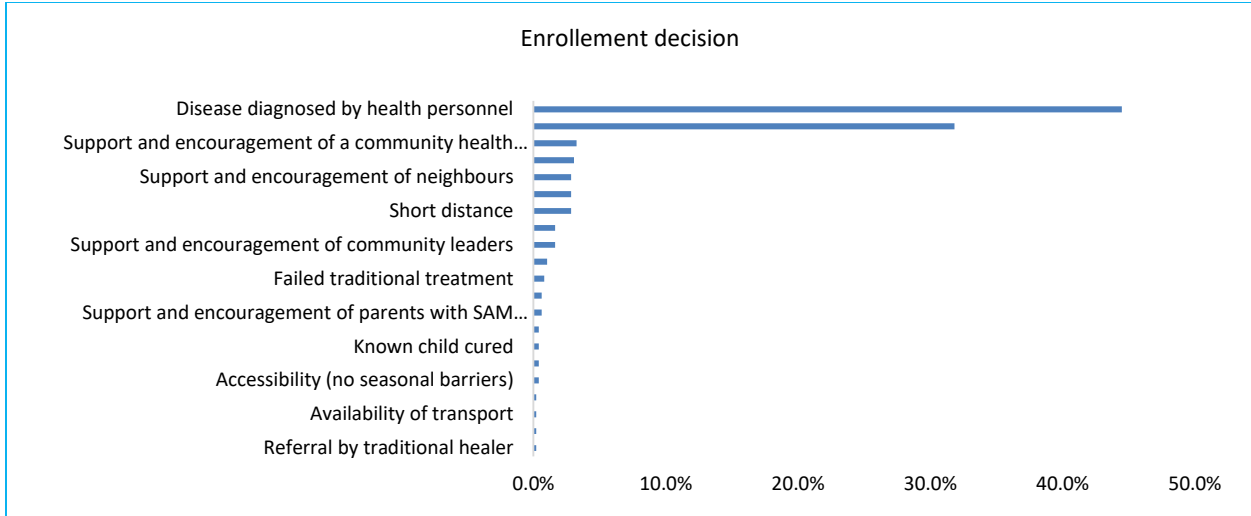
Figure 36: Wide area survey- Enrollment decision

Reasons for none enrollment

Other reason for non-enrollment include; lack of essential drugs in the facility, previous re rejection due to measurements, other people complaining about the program, looking after animals, in another program, long waiting time, not screened recently and other child illness. This was followed by distance and illness as shown in figure 37;
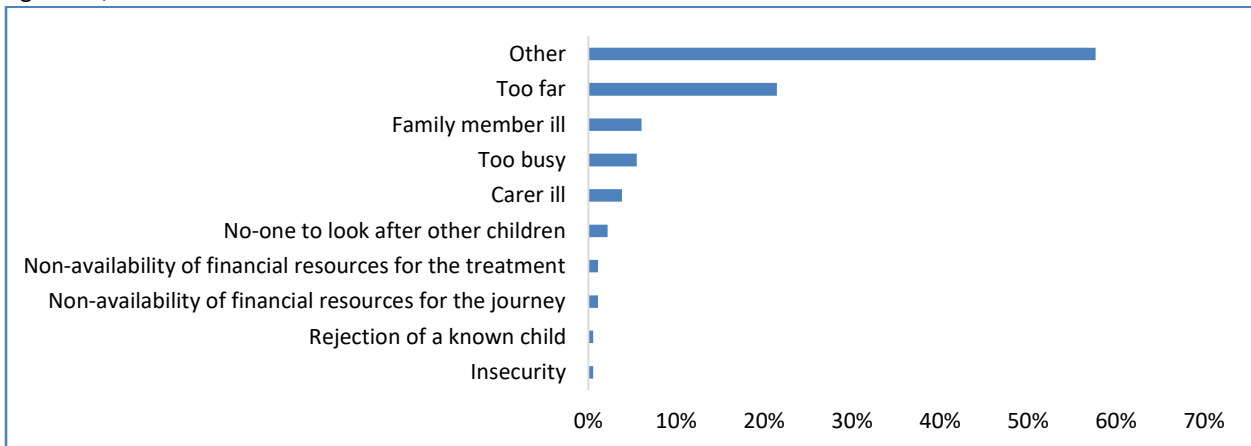

Figure 37: Non enrollment reasons

DISCUSSION & RECOMMENDATIONS

Discussion

The single estimate coverage from the SQUEAC coverage assessment for Wajir county in 2023 is **60.4%(CI 95% :52.1 – 68.5)** for OTP and **66.1%(CI 95% :61.6 – 70.5) for SFP.** The effectiveness coverage was **55.9%** and **62.3**% for OTP and SFP respectively. The met need was 58.1% for OTP and 63.9% for SFP. Overall the results are above the sphere threshold of 50% for rural areas and thus calls for sustained efforts to further improve and maintain so as to reach all children in need of IMAM services in the county.

The above 50% threshold performance of coverage in Wajir county has been made possible by the following major factors: Adequate human resources available in the IMAM program encompassing of 87 Nutritionists in addition to the other nutrition workforce in the county including Clinical officers, Nurses, CHAS, PHT/Os and 3 Pediatric consultants with adequate training on how to manage the IMAM program clients. Only the newly employed health workers who offer nutrition services have not been trained on the IMAM module

Good will from the leadership of the county was also highlighted and demonstrated through the employment of the health workforce in the county who play a major role in the IMAM service provision and this has also gone a long way in ensuring availability and access of the IMAM services in Wajir County. Coverage has also been enhanced through the support of partners in the county as a result of the ongoing emergency response which seeks to address the health and nutrition challenges experienced by the communities as a result of 5 failed rain seasons in the county. For the past 6 months' coverage mapped of outreaches against the operationalized outreaches stand at an average of 95% and is planned to continue for the next 3 months.

Availability of Nutrition supplies and commodities was cited a major contributor to a vibrant IMAM program and it was noted that the county has not experienced stock outs of RUTF, RUSF, F75, F100 and Resomal for prolonged periods during the year of analysis. Furthermore, whenever shortages have been experienced inter-facility transfers of the commodities have been facilitated by the office of the CNC and SCNC.

Awareness of the IMAM program by the community has also enhanced health seeking and during episodes of acute malnutrition community members seek medical attention at the earliest opportunity thereby benefiting from good treatment outcomes. This is also triangulated by evidenced of the low defaulter rates in both OTP and SFP in Wajir county which was 2.2% and 1.7% respectively in the period of investigation. The family MUAC approach has also played a key role in monitoring and referral of the children for IMAM services especially in the four sub counties that the initiative has been rolled out.

The ongoing response has seen the introduction of cash transfer programs to cushion families from the adverse effects of the drought and acute malnutrition was used as criteria for registration thereby boosting program coverage and also ensuring support to household food insecurity.

Of importance to note also is that the program outcomes for both OTP and SFP are within the sphere standards thus an indication that the IMAM program in Wajir is working well with cure rates(effectiveness) at an average of 96.2 % and 96.6% for OTP and SFP respectively.

The large number of CHVs in the county has also contributed to the good coverage observed as this group are involved in IMAM service provision including conducting active case finding, Home visits, counselling, health education and defaulter tracing.

The assessment also identified key challenges and gaps in the IMAM program which should be addressed to ensure access and coverage including;

High maternal workload which impedes health seeking of the mothers for their children given that they have a lot to do and handle at household level e.g. talking care of other children, performing household chores and even looking after animals.

Closely related with the high maternal workload is the scheduled one-day weekly day for offering IMAM in facilities makes mothers miss their appointments resulting in absenteeism and even defaulting. This will in turn lead to poor treatment outcomes and in the long run affect the perception of the community towards IMAM and may decrease coverage.

Stock outs of essential drugs in the health facilities and outreaches also affects coverage as members of the community would like to seek services where they can find various nutrition and health services unlike instances where there are no supplies for integrated service delivery.

Other opportunity costs related to the IMAM service provision including bed charges for inpatient services and transport is a hindrance to access to IMAM for most community members because of poverty and the current harsh economy due to the prolonged drought.

Non-adherence to treatment guidelines by health workers CHVs which was evidence by in the program data admission to wrong programs, early discharges and late discharges leads to poor treatment outcomes and in turn affect coverage of the IMAM program.

Frequent closure of health facilities due to insecurity or absenteeism of health workers is also barrier to the IMAM program as it disrupts the treatment of clients in the program through high defaulting and long length of stay.

Staff shortages was also identified as barrier for IMAM coverage has it leads to low quality service delivery due to high workload especially in facilities that have schedule a single day for IMAM service delivery. In some instances, where facilities have only one health worker IMAM service delivery is delegated to the CHV who may not be very competent to offer quality IMAM services as confirmed by early discharges, very long stay due to under dosage and monitoring of IMAM clients using MUAC only instead of all the anthropometric measurements. The result of these is poor retention of clients in the program and thereby lowering coverage.

Ineffective defaulter tracing mechanism in villages with non-functional community units due to the weak leak between the IMAM service and the community units thus clients who are miss their appointments are not followed up.

From the above key barriers and boosters, the following recommendations were highlighted for improvement of the IMAM program coverage in Wajir county.

Recommendations

#	Barriers	Recommendation	Responsible	Timelines
1	No active case finding in the community	Roll out family MUAC in Wajir East and Tarbaj sub-county Scale up family MUAC in Eldas, Wajir North, Wajir West and Wajir South sub-counties Sensitization of CHVs on active case finding and referral	Department of Health and Partners	August – December 2023
2	No CHVs in the community	In liaison with the Community health strategy roll out of the Community units in all the villages	Community strategy focal person	October 2023 – April 2024
3	Stock out of IMAM commodities	Regular monitoring, forecasting and management of commodities	CNC	ongoing
4	Long distance to service delivery point	Re-mapping of outreaches and scale-up (short term) Operationalization of health facilities in with communities with constructed health facilities (long term)	Director of health	August
5	Stock out of essential drugs	Advocate for regular procurement of essential drugs to ensure no stock outs in health facilities	Director of health	Continuous
6	Maternal workload	Community sensitization sessions on male involvement in child care by religious leaders Community feedback through community dialogue	Community strategy focal person /	Continuous
7	Health worker and CHV capacity gap/ non adherence to protocol	Capacity training for health workers through formal trainings, OJT and mentorship sessions Sensitization of CHVs on IMAM protocol	CNC/SCNC	Continuous
8	Inadequate number of health care workers for IMAM service delivery	Advocate to the county government for the recruitment of health workers for Health and Nutrition service delivery	Director of health	Continuous
9	Long waiting time during distribution as a result of scheduled distribution days	IMAM service delivery on a daily basis in facilities that have one day for service delivery.	CNC	August to February

#	Barriers	Recommendation	Responsible	Timelines
10	Theft of nutrition commodities in some facilities	Work with the provincial administration in apprehending and prosecuting suspects Advocate to the county assembly for by laws that outlaw the selling of therapeutic feeds in the shops	Explore possibility of unique batch numbers for each health facility or sub-county Enforcement and market surveillance by public health officers	Continuous
12	Sharing of nutrition commodities / ration at family and community level	Community sensitization and individual counselling on the importance of following treatment protocols for optimum benefits of the treatment rations Advocate for linkage to safety net programs for households	CNC/ Community focal person	Continuous
13	Social bothers especially the old age citizens	Involvement of the community leadership in the IMAM program Linkage to safety net programs supporting the elderly	CNC/ partners	Immediately and continuously
15	Temporary closure of health facilities/ facility closed in the afternoon	Organize schedule at the sub county level for cover during staff absence during trainings and leave Regular support supervision and monitoring to ensure facilities are working on normal hours. Director to issue circular on working hours	Director of health	Continuous
16	Poor referral system	Capacity strengthening of the CHVs and Health workers on referral Provision of referral tools e.g. MOH 100	CNC/ Community focal person	Continuous
17	Lack of incentive for CHVs	Advocate to the County assembly for the passage of the CHV bill to law so that the county can start paying the CHVs.	CNC/ Community focal person	By December 2023

#	Barriers	Recommendation	Responsible	Timelines
19	Poor communication on the IMAM program/ NO regular meetings	Have regular community forums for sharing services available at facility level e.g. during barazas.	CNC/ Community focal person	Continuous
20	Pastoral / nomadic lifestyle of the communities	Community education and sensitization on health seeking whenever they migrate in search of pasture and water. Remapping of outreaches to ensure access for communities who migrate	CNC/ Community focal person	Continuous
21	Myths and Stigma of carers - long over stay, mothers embarrassed Stigma by the middle class on seeking care	Community sensitization on the benefits of IMAM while addressing stigma and myths	CNC/ Community focal person	Continuous
22	Transport cost and other opportunity costs.	Advocate to the county government to waive costs associated with IP services for under- five children	CNC/ Community focal person	Continuous
23	Inadequate information on IMAM program by the community	Sharing of IMAM information in Health education sessions, village meetings and community barazas	CNC/ Community focal person	Continuous
24	Poor health seeking behavior e.g. late admission to IP after seeking services in private clinics	Community sensitization on the benefits of early treatment in the IMAM program Employ nutritionist as a requirement Pilot roll out of IMAM program in private hospitals	CNC/ Community focal person County and National	Continuous
27	Poor attitude by the community towards the staff	Regular meetings between the community and the health workers for better understanding of their roles in Health care delivery.	CNC/ Community focal person	Continuous
28	High facility workload	Posting of health workers from facilities that have more to less staffed facilities. / Staff rationalization	Director of health	Continuous

#	Barriers	Recommendation	Responsible	Timelines
		Advocate for the recruitment of more		
30	Poor / ineffective defaulter tracing mechanism	Linkage of the health facility IMAM service delivery and the CHVs for continuous follow up and defaulter tracing when clients miss out on appointments	CNC/ Community focal person	Continuous
31	Inadequate support supervision from CHMT/ SCHMT	Regular support supervision to facilities based on performance	Director of health	Continuous

ANNEXES

Annex 1: List of participants trained during SQUEAC

No	NAME	INSTITUTION/DESIGNATION
1	Hassan Abdi Irobe	SCNC
2	Issack Rono Bashir	SCNC
3	Abdi Hassan Diis	Enumerator
4	Deka Ali Hussein	Enumerator
5	Fatuma Mohamed Ahmed	Enumerator
6	Abass Malak Elmi	Enumerator
7	Rahma Adan	MOH
8	Musa Adan mohamed	Enumerator
9	Abduljabar Omar	Enumerator
10	Leyla Abdikarim	Enumerator
11	Zamzam Hassan	Enumerator
12	Ugas Saney Abdi	Enumerator
13	Hassan Abdi Mohamed	SCNC
14	Mahat Dahir Mohamed	SCHRIO
15	Nuria Ibrahim	CNC
16	Oliver Kamar	Nutrition Officer - UNICEF
17	Yussuf Adow	SCNC
18	Ibrahim Issack	SCNC
19	Dahira Ibrahim	SCNC
20	Nicholas Kirimi	Nutrition Officer - UNICEF
21	Kibet Chirchir	UNOPS/UNICEF Consultant
22	Charles Mumbi	Nutrition Officer - UNICEF

Annex 2: Qualitative data sampling framework

MOVEMENT PLAN								
Day 1 (12th May 2023)	Team 1	Team 2	Team 3	Team 4	Team 5	Team 6	Team 7	Team 8
Destination / Facility	Halane/ Wagberi	Jowhar/ Kajaja 2	WCRH/Catholic Dispensary	AIC/Elnoor	Wagalla / Leheley	Argane/Wajir Bor	Maumau / Griftu	Wajir
Overnight	Wajir	Wajir	Wajir	Wajir	Wajir	Wajir	Wajir	Wajir
Day 2 (13th May 2023)								
Destination / Facility	Abdiwaqo	Dadhantaly Disp	Della	Wargadud	Habaswein	Dambas	Eldas	Lagbogol
Overnight	Eldas	Eldas	Eldas	Eldas	Habaswein	Eldas	Eldas	Habaswein
Day 3 (14th May 2023)								
Destination / Facility	Korondile	Bute	Danaba	Bute	Shidley	Hadado	Mathow	
Overnight	Wajir	Wajir	Wajir	Wajir	Wajir	Wajir	Wajir	

Annex 3: Sampled Villages for Wide area survey

Sub_County	Ward	Facility	Village	Cluster number
Eldas	Anole Ward	Waradey	malkaqufu soth	1
Eldas	Eldas	Eldas Nimadic	Barquqe	2
Eldas	Elnur-TulaTula	Elnoor	Bulla Kurman	3
Tarbaj	Tarbaj	Tarbaj	Bulla Iftin	4
Tarbaj	Tarbaj	Jowhar	Bulla Light	5
Tarbaj	Tarbaj	Katote	Bulla Barwaqo	6
Tarbaj	Elben	Elben	Bulla Primary	7
Tarbaj	Sarman	Dambas	Machine ben	8
Wajir East	Khorof	Wajir Bor	Bulla Central	9
Wajir East	Township	Wajir County Referral	Bulla Cental	10
Wajir East	Barwaqo	Barwaqo	B. Kalkacha	11
Wajir East	Wagberi	Wagberi	Bulla Kom 2	12
Wajir North	Danaba	Danaba	Andaraka	13
Wajir North	Malkagufu	Malkagufu	Cherdab	14
Wajir North	Korondile	korondille	Busia A	15
Wajir North	Godoma	Watiti	Watiti A	16
Wajir North	Bute	Ogorji	Ogorji Libow	17
Wajir South	Habaswein	Dilmanyale	bula gumar	18
Wajir South	Habaswein	Abakore	Abaq	19
Wajir South	Lagbogol South	Tesorie	Asmara	20
Wajir South	Burder	Burder	Jilibey	21
Wajir South	Benane	Shidley	marothiley	22
Wajir South	Lagbogol South	Lehely	Kurman	23
Wajir South	Ibrahium Ure	Kukaley	El-Adow	24
Wajir South	Benane	Macheza	Kulan	25
Wajir West	Arbajahan	Arbajahan	Bulla Primary	26
Wajir West	Ganyure - Wagalla	Ganyure	Bulla Kurman	27
Wajir West	Ganyure - Wagalla	Tula Tula	Bulla Central	28
Wajir West	Hadado	Koricha	Koricha	29

Annex 3: Summary of wide area survey results

Sub County	Ward	Village	Cluster Number	Total 6 to 59	Total SAM	Total MAM
Eldas	Anole Ward	malkaqufu soth	1	39	2	16
Eldas	Eldas	Barquqe	2	57	10	22
Eldas	Elnur-TulaTula	Bulla Kurman	3	46	1	8
Tarbaj	Tarbaj	Bulla Iftin	4	43	0	5
Tarbaj	Tarbaj	Bulla Light	5	41	3	7
Tarbaj	Tarbaj	Bulla Barwaqo	6	37	1	9
Tarbaj	Elben	Bulla Primary	7	29	1	6
Tarbaj	Sarman	Machine ben	8	26	0	3
Wajir East	Khorof	Bulla Central	9	27	0	7
Wajir East	Township	Bulla Cental	10	37	1	5
Wajir East	Barwaqo	B. Kalkacha	11	39	3	12
Wajir East	Wagberi	Bulla Kom 2	12	61	5	17
Wajir North	Danaba	Andaraka	13	60	3	13
Wajir North	Malkagufu	Cherdab	14	53	2	12
Wajir North	Korondile	Busia A	15	50	3	9
Wajir North	Godoma	Watiti A	16	45	1	5
Wajir North	Bute	Ogorji Libow	17	32	4	3
Wajir South	Habaswein	bula gumar	18	35	0	13
Wajir South	Habaswein	Abaq	19	69	11	40
Wajir South	Lagbogol South	Asmara	20	39	2	17
Wajir South	Burder	Jilibey	21	33	0	5
Wajir South	Benane	marothiley	22	42	6	18
Wajir South	Lagbogol South	Kurman	23	42	2	13
Wajir South	Ibrahium Ure	El-Adow	24	55	4	11
Wajir South	Benane	Kulan	25	19	2	2
Wajir West	Arbajahan	Bulla Primary	26	39	4	16
Wajir West	Ganyure - Wagalla	Bulla Kurman	27	30	1	12
Wajir West	Ganyure - Wagalla	Bulla Central	28	42	5	22
Wajir West	Hadado	Koricha	29	39	5	22
			Grand Total	1207	82	350

Annex 4: Wajir County survey plan 2023

Key activity	Sub activities	Inputs	Expected outputs	Timelines
I. Preparation for coverage assessment				
a) Coverage assessment road map preparation and validation	Survey protocol developed and presented to the NITWG	Previous coverage assessment report Nutrition situation reports NDMA bulletins IMAM data from KHIS	Survey roadmap validated	5 days (24th to 29 April 2023)
b) Consolidation and adaption of the training and data collection tools	Preparation of training materials and data collection tools	Training materials from the coverage assessment website.(https://www.coverage-monitoring.org/squeac-2) Training resources and data collection from other counties e.g. ODK tools	Training and data collection tools prepared	1 day(28th April 2023)
II. Training of survey teams				
a) Classroom training	Introductions and schedules	Training schedule / timetable	20 enumerators, 10 supervisors trained on the coverage assessment	1 day (2nd May 2023)
	SQUEAC Methodology review	Validated methodology		
	Classroom training on Quantitative tools and Distribution of tasks to the assessment team	Quantitative data collection tool IMAM registers(In-patient, OTP, SFP & Stock management),		
b) Training report	Training report for the data collectors, CHMT, SCHMT and nutrition sector partners within the county	Training summary notes	Training report on quantitative data collection in Word and PDF	Half a day (3rd May 2023)
III. Stage 1				
a) Quantitative data collection and analysis	Facility quantitative data collection	List of IMAM facility, Detailed work/movement plan and Quantitative data collection tool	Summary of quantitative data; In-Patient/OTP/SFP	4 days(3rd to 7th May 2023)
	OTP and SFP additional data collection	Ration card, referral forms, screening reports, defaulter tracing schedule	Availability and documentation detail report	
b) Qualitative data collection	Training on Community Assessment	FGD Guide, SSI, KII and FGD Questionnaire (Guiding question)	Trained SQUEAC team: Supervisors, Team leaders, Enumerators	2 days(8th to 10th May 2023)
	Training on Qualitative tools			
	Understanding of local terminology			
	Development of seasonal calendar			
	Community and Facility interview (Qualitative data collection)	FGD Guide, SSI, KII and FGD Questionnaire (Guiding question) Detailed work plan	Daily Qualitative data collection summaries per team	4 Days(11th to 15th May 2023)
c) Qualitative data analysis	Contextual qualitative data summary compilation & analysis	Daily Qualitative data summaries	List of potential buriers and booster with details of sources and method used	3 days (16th to 18th May 2023)
	Identification of potential Barriers and Boosters of coverage (OTP/SFP separately)	Daily Qualitative data collection summaries		

Key activity	Sub activities	Inputs	Expected outputs	Timelines
	Harmonization Seasonal calendar	Seasonal calendar template	Seasonal calendar outline	
	BBQ tool summary development	List of potential barriers and booster to OTP and SFP coverage	Detailed BBQ Report with weighted barriers and booster; For OTP and SFP separately	
	Development of Mind/Concept maps	SFP Detailed BBQ Result OTP Detailed BBQ Results GitMap software	OTP Digital Concept Map SFP Digital Concept Map	
IV. Stage 2				
a) Setting and testing hypotheses about programme coverage	Data Synthesis and Hypothesis formulation	List of potential buriers and booster	Hypothesis statement outlining areas of high and low coverage	1 Day (19th May 2023)
	Hypothesis Testing: preparation for Small Area Survey	Anthropometric equipment, selected villages, at least 3 per area of high and low coverage, Questionnaires for cases in / not in the program	LQAS Validated hypothesis results.	3 days (20th to 22nd May 2023)
b) Analysis of findings	*Conducting Small studies / small area surveys (according to hypothesis)*			
	Data analysis for Small Area Survey	Small area screening data		
c) Presentation of stage 1 & 2 findings to national SQUEAC taskforce for approval before moving to stage 3	Building Histogram, BBQ weighted/unweighted, concept map coverage	OTP & SFP concept map, BBQ result, at least 4 histogram data	Histogram, BBQ weighted/unweighted, concept map coverage	3 days (23rd to 25th May 2023)
	Formulation of the Prior and Wide Area Survey Sampling	Histogram, BBQ (weighted/unweighted), concept map coverage, BayesSQUEAC app, (sampling frame) and County population (per sub-county)	Prior mode, SAM/MAM sample size and village sample size	
	Presentation of STAGE 1 & 2 findings to NITWG	STAGE 1 & 2 Finding PowerPoint report	Validated /Approval to proceed to STAGE 3	
V. Stage 3				
Preparation for Wide Area Survey:	Further classroom training in planning for wide area survey	Anthropometric equipment, detailed movement plan, ODK App/form, supervision team	Stage 3 Training Report Trained SQUEAC team: Supervisors, Team leaders, Enumerators. Daily ODK data submission	**7 days (26th May to 1st June 2023)**
	Selection of village and development of movement plan			
	Survey data collection; wide area survey			
Survey Data analysis and recommendations	Estimations of Coverage (Posterior calculations)	Wide area survey data, BayesSQUEAC and toolsSQSL		**2 days (2nd to 3rd June 2023)**
	Recommendations and Action plan	Challenges found in Stages 1, 2 & 3 Report	List of Recommendations and Action plan	
VI. Coverage assessment report				
a) Report writing and quality assurance	Writing of the detailed narrative report for Wajir County and submitting it to the County, NITWG and UNICEF for comments	Stages 1, 2 & 3 results list of recommendation / action plan PowerPoint point presentation Draft report County Coverage report	Draft report in Ms PowerPoint and Narrative report in Ms Word .	4 days (4th to 7th June 2023)

Key activity	Sub activities	Inputs	Expected outputs	Timelines
b) Finalization of the Narrative report	Inputting of comments and finalization of the narrative report	Feedback from SQUEAC reviewer / NITWG SQUAC task force	Final report of SQUAEC coverage assessment of Wajir County in Ms. Word and PDF	2 Days (8th to 9th June 2023)
	Submission to the County, NITWG and UNICEF		A summary/infographic for Wajir county developed and shared	
			A folder containing all the clean coverage assessment data (in MS Excel), any other files or documents used in the assessment.	
			Field implementation report (maximum four pages) highlighting the assessment process, challenges/lessons, and best practice for future consideration/uptake in similar assignments.	