



GARISSA COUNTY

**SEMI-QUANTITATIVE  
EVALUATION OF ACCESS  
AND COVERAGE (SQUEAC)  
SURVEY REPORT**

REPORT \_ MAY 2023



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## EXECUTIVE SUMMARY

Garissa County has seven (7) Sub Counties namely; Garissa, Fafi, Lagdera, Ijara, Balambala, Hulugho and Dadaab, and an estimated population of 965,258 (Male 497,286, Female 467,972) people of which 144,786 are children less than 5 years of age. The County Department of Health (CDH) has 104 public health facilities and 83 health facilities offering IMAM services that include eight (8) stabilization centers. The last IMAM coverage assessment in the county was conducted in December 2019, with the aim to assess program performance and the issues affecting access and utilization of services. The 2019 SQUEAC investigations estimated overall Single coverage for OTP and SFP in Garissa County at 55.4% (43.3-66.9 95% Credible Interval) and 59.0% (53.1 - 64.8 95% Credible Interval) respectively. In 2023, there was need for both the county health team and partners to understand IMAM program performance and its effectiveness, following implementation of the 2019 recommendations, as well as generate recommendations and action points that shall help improve the IMAM coverage as well as identify un-met program needs.

It is for this reason that the County Department of Health, with financial support from UNICEF and partners implemented a coverage assessment using SQUEAC survey methodology between May and June 2023, to evaluate access and coverage of integrated management of acute malnutrition (IMAM) program. The assessment involved implementation of all the three stages of the SQUEAC methodology.

***In Stage one:*** areas of high and low coverage in Garissa County were identified as well as the boosters and barriers influencing IMAM program coverage.

***In Stage two:*** the hypothesis for areas of high and low coverage formulated, tested and verified in five villages of high coverage and five villages of low coverage.

***In Stage three:*** About 1,860 children 6 to 59 months were screened for malnutrition during the wide area survey; where 122 and 252 were found to be SAM and MAM respectively, after which coverage estimation was done. The current Single coverage estimate for OTP and SFP is **48.6% (41.8% - 55.6%)** and **59.0% (53.1 - 64.8 95% Credible Interval)** respectively, below the SPHERE indicator for coverage in rural setting (50%). The **effectiveness of coverage estimate for OTP and SFP** in Garissa is **41.6% (34.0% - 49.7%)** and **45.3% (39.5% - 51.1%)** respectively, below the SPHERE indicator for coverage in rural setting (50%). This indicates untimely case finding and recruitment of cases into IMAM program.

From the SQUEAC investigation, the main boosters to IMAM program coverage in Garissa were found to include; **the Family MUAC approach, availability of nearby health facilities and outreach sites** in the hard-to-reach areas and far distance sites; minimal **stigma associated with malnutrition** hence caregivers are able to seek for health treatment of their severely malnourished under-fives. On the other hand, the main **barriers** to IMAM program coverage in Garissa included; **maternal workload, migration among nomadic pastoralist observed to interrupt follow up of treatment to completion;** unmotivated CHVs affecting follow up of cases and defaulter tracing.

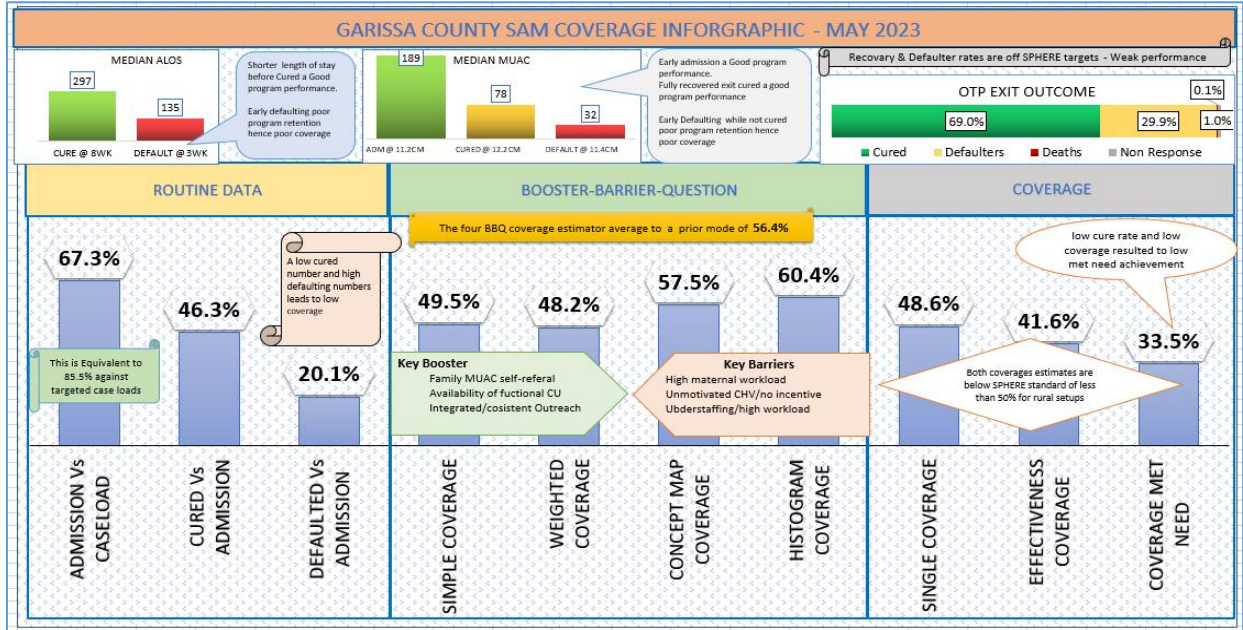


Figure 1: Garissa County SAM Coverage Info-graphic

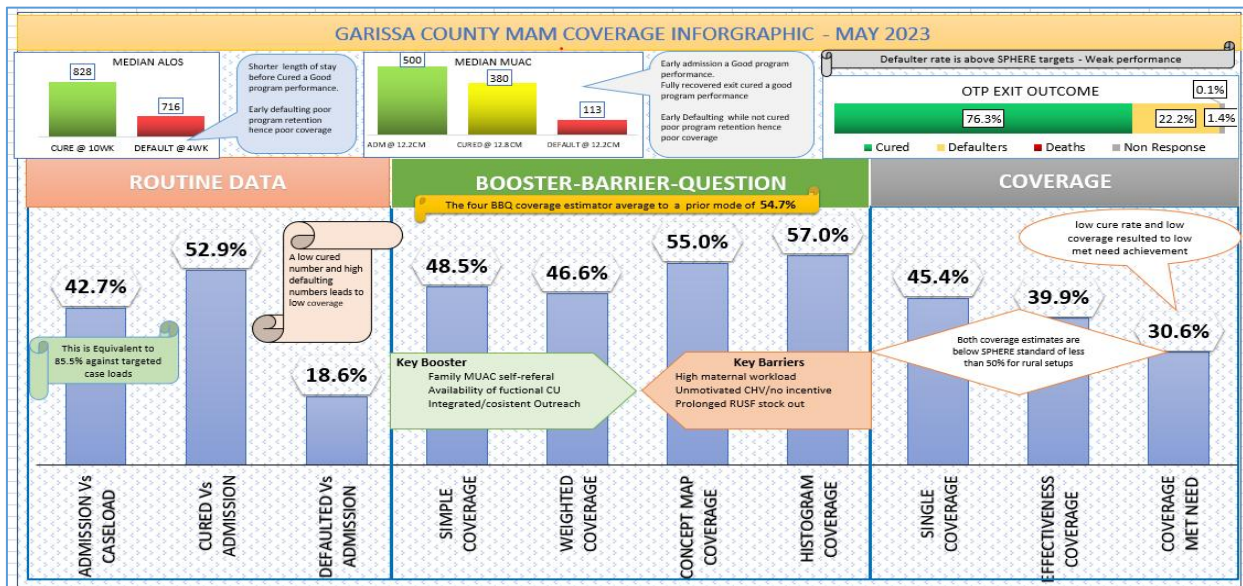


Figure 2: Garissa County MAM Coverage Info-graphic

Table 1: A summary of the possible recommendations from the SQUEAC investigation

Barrier	Possible recommendations
Poor health seeking behaviour (medical assistance)	<ul style="list-style-type: none"> <li>Strengthen CHS strategy and primary health care</li> <li>Improving health services at public health facilities to create demand for services.</li> <li>Regular inspections by government agencies for quality service delivery.</li> <li>Continuous creation of awareness on health seeking behaviors</li> </ul>
High maternal workload	<ul style="list-style-type: none"> <li>Involvement of male partners to minimize maternal workload</li> <li>Health education sessions</li> <li>Provision of essential amenities close to households</li> <li>Roll out ICCM-CMAM program and scaling Family MUAC</li> </ul>
Low awareness of	<ul style="list-style-type: none"> <li>Continuous creation of awareness on health seeking behaviors</li> </ul>



Barrier	Possible recommendations
malnutrition signs	<ul style="list-style-type: none"> <li>Scale up/roll out Baby friendly community initiative (BFCl) to address knowledge gaps on MIYCN/IMAM.</li> </ul>
Community leaders not involved in awareness creation	<ul style="list-style-type: none"> <li>Inclusion of key community leaders in community health and nutrition forums</li> <li>Scale up/roll out BFCl to address knowledge gaps</li> </ul>
Community members lack basic information on IMAM services	<ul style="list-style-type: none"> <li>Continuous creation of awareness on health seeking behaviors</li> <li>Sensitization of Key community leaders on basic IMAM modules</li> <li>Inclusion of key community leaders in community health and nutrition activities</li> </ul>
Some hard-to-reach areas do not have outreach sites (Nomadic sites)	<ul style="list-style-type: none"> <li>Establish nomadic mobile outreach services</li> <li>Map all the nomadic stop points / migratory route</li> </ul>
Inadequate staff to support outreach activities and routine H/F services concurrently, and Health facility closed sometimes	<ul style="list-style-type: none"> <li>Employment of more health care workers especially for level 2.</li> <li>Employ short-term contracted health staff to support outreach services during emergencies</li> <li>Re-deployment of existing staff to facilities with inadequate staffing / high workload</li> </ul>
Lack of essential medicine at H/F and outreaches	<ul style="list-style-type: none"> <li>Strengthen medical supply chain</li> <li>Timely procurement of essential drugs by county</li> <li>Partner support on providing outreach services</li> </ul>
Impassable roads	<ul style="list-style-type: none"> <li>Preposition of health supplies before the rainy season.</li> <li>Roll out ICCM-CMAM program and scaling Family MUAC to increase IMAM coverage</li> </ul>
Long distance to the Service deliver points necessitated by outward migration	<ul style="list-style-type: none"> <li>Remapping/establishment of mobile outreaches in hard to reach areas.</li> <li>Revitalization non-functional health facilities to increase service reach.</li> </ul>
Migration among nomadic pastoralist interrupts completion of treatment	<ul style="list-style-type: none"> <li>Establish nomadic outreach services</li> <li>Map all the nomadic migratory routes</li> </ul>
Misuse of RUTF	<ul style="list-style-type: none"> <li>Establish committees at sub-county level to look into the issue</li> <li>Strong legislative measures to deal with selling of nutrition/medical supplies</li> <li>Addressing household food security</li> <li>Health education on commodities.</li> </ul>
Lack of follow up of cases in IMAM program	<ul style="list-style-type: none"> <li>Strengthen CHS and linkages with health facilities.</li> <li>Remapping of villages and recruitment of more CHVs.</li> </ul>
Minimal screening and referral of malnourished cases by CHVs	<ul style="list-style-type: none"> <li>Strengthen CHS and linkages with the health facilities. Strengthen follow up/feedback mechanisms between health facilities and community.</li> <li>Remapping of villages and recruitment of more CHVs.</li> </ul>
Many inactive CHVs who are not motivated	<ul style="list-style-type: none"> <li>Enactment of CHS bill to ensure CHVs are motivated/supported through incentives to do their work.</li> <li>Capacity strengthening of CHVs and provision of necessary tools and equipment for their work.</li> </ul>
Wrong/negative reaction upon rejection	<ul style="list-style-type: none"> <li>Health education on IMAM programme to community members/caregivers.</li> </ul>
Nutritionists and other HCPs not involved in CHVs review meetings and Nutrition program agenda not part of discussion	<ul style="list-style-type: none"> <li>Involve/integrate all health workers in CHVs review meetings.</li> </ul>
Lack of referral slips	<ul style="list-style-type: none"> <li>Provision of CHVs with referral tools (MOH 100)</li> <li>Proper documentation/filling of referral slips</li> </ul>



Barrier	Possible recommendations
Lack of feedback to CHVs from the H/F upon referral of malnourished cases or traced defaulters	<ul style="list-style-type: none"> <li>Strengthen CHS and linkages with the health facilities. Follow up/feedback mechanisms between health facilities and community.</li> </ul>
Poor perception of IMAM program; RUTE/RUSF causes diarrhea	<ul style="list-style-type: none"> <li>Health education on the use of RUTE/RUSF and hygiene practices to reduce contamination.</li> <li>Follow treatment protocols for IMAM clients.</li> </ul>
Lack of defaulter tracing strategy for the nomadic pastoralist communities	<ul style="list-style-type: none"> <li>Established nomadic outreach services</li> <li>Map all the nomadic stop points / migratory route</li> </ul>
Newly employed HCPs not trained on IMAM	<ul style="list-style-type: none"> <li>Train newly employed staff on IMAM modular protocol</li> </ul>
High workload for the facility HCP	<ul style="list-style-type: none"> <li>Employment of more health care workers especially dispensary level</li> <li>Re-deployment of existing staff to facilities with inadequate staffing / high workload</li> </ul>
Inadequate Anthropometric tools:	<ul style="list-style-type: none"> <li>Procurement and distribution of more Anthropometric tools and equipment</li> </ul>
Poor documentation	<ul style="list-style-type: none"> <li>Training/OJTs on documentation</li> <li>Regular support supervision on documentation</li> <li>Periodic DQA and data review</li> </ul>
Long queues and longer waiting time during distribution days	<ul style="list-style-type: none"> <li>IMAM services should be offered on daily basis (high volume facilities)</li> <li>Increase the frequency of distribution days to ease long waiting hours (low volume facilities)</li> </ul>

# INTRODUCTION

## Background Information

Garissa County, classified as an Arid and Semi-Arid Land County of Kenya, is one of the Northeast Counties of Kenya covering 44,175.5 Km<sup>2</sup>. It borders Wajir County to the North, Tana River County to the West, Isiolo County to the Northwest, Lamu County to the South and the Federal Republic of Somalia to the East. The county has seven (7) Sub Counties namely: Garissa, Fafi, Lagdera, Ijara, Balambala, Hulugho and Dadaab. It has an estimated population of 965,258 (Male 497,286, Female 467,972) people of which 144,786 are children less than 5 years of age (KNBS Population Census, 2019). The County has four (4) livelihood zones namely: pastoral (camels, goat, sheep and cattle), agro pastoral, casual/ waged labor and formal employment. Like any other ASAL County, Garissa County faces multiple challenges of prolonged drought, erratic rainfall, insecurity threats from the porous Somalia border, which has been a threat to community movement in the affected areas, especially to the non-locals, in addition to refugee influx from the neighboring highly unstable Somalia.

Following prolonged drought in Kenya since 2021 to-date, the Garissa County Department of Health (CDH) has been responding to the critical nutrition situation while sustaining the implementation of routine high-impact nutrition interventions in line with the Garissa County Nutrition Action Plan (2019-2023). Garissa County has 104 public health facilities (8 Hospitals, 21 Health centers and 75 Dispensaries). The County has 83 health facilities offering Integrated Management of Acute Malnutrition (IMAM) services that include eight (8) stabilization centers (Garissa Teaching and Referral Hospital, Iftin, Ijara, Hulugho, Balambala, Fafi, Dadaab and Modogashe). A total of 360 outreach sites are mapped, of which 280 outreach sites are supported by health and nutrition partners.

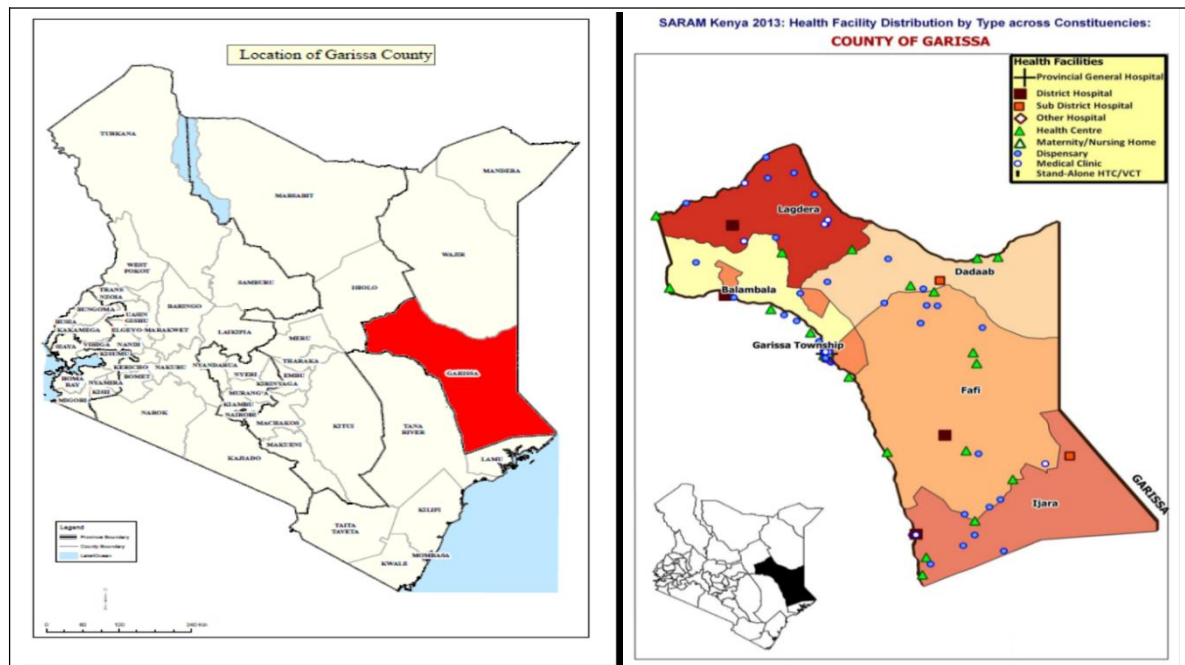


Figure 3: A map showing Administrative and Constitution Boundaries of Garissa County



## Garissa County Health and Nutrition Situation

Nutrition situation is Critical (Phase 4) according to the 2022 Short Rains Assessment Integrated Phase Classification for acute malnutrition analysis (IPC AMN), Global Acute Malnutrition (GAM) by WHZ range of 15 – 29.9 percent with a GAM and SAM of 20.3% and 4.3% respectively. The proportion of children at a risk of malnutrition is above the long-term average (NDMA Early Warning Bulletin, April 2023). Currently, the drought situation is normal with stable trend in the county and across all livelihood zones (NDMA EWB, April 2023). Diseases of respiratory system are the main cause of outpatient morbidity, both in under-fives and over 5 years with 34% and 21% respectively, followed by diarrhoea, diseases of the skin and pneumonia at 10%, 7%, 6% respectively (Source: Garissa KHIS 2022). Pneumonia and diarrhoea are the morbidity, which contribute to the highest mortality cases with 7.7% and 5% respectively (Garissa MoH 2022). The overall County poverty estimate is 65.5% (KIHBS 2015/16) and Insurance coverage of 6.6% (Kenya Household expenditure and utilization survey 2018).

The November 2019 coverage investigation using SQUEAC methodology showed a coverage estimate of 55.4% and 59.0% for OTP and SFP respectively above the recommended coverage (>50%) for IMAM program in the rural areas according to the SPHERE standards for a rural population. In this case, coverage for both SAM and MAM in Garissa County performance was above the recommendations.

IMAM Coverage	OTP (Single Coverage Estimate)	SFP (Single Coverage Estimate)
Garissa County Estimate coverage Nov 2019	55.4% (43.3%-66.9% 95 CI)	59.0%

### Trends in IMAM Program Admissions

A look at the IMAM program data, the new admissions for OTP and SFP in 2022 were consistently high compared 2021, indicating an increasing trend due to the increasing caseloads. Trajectories for 2023 suggest much higher trends comparing the 1<sup>st</sup> three month of January to March of 2023.

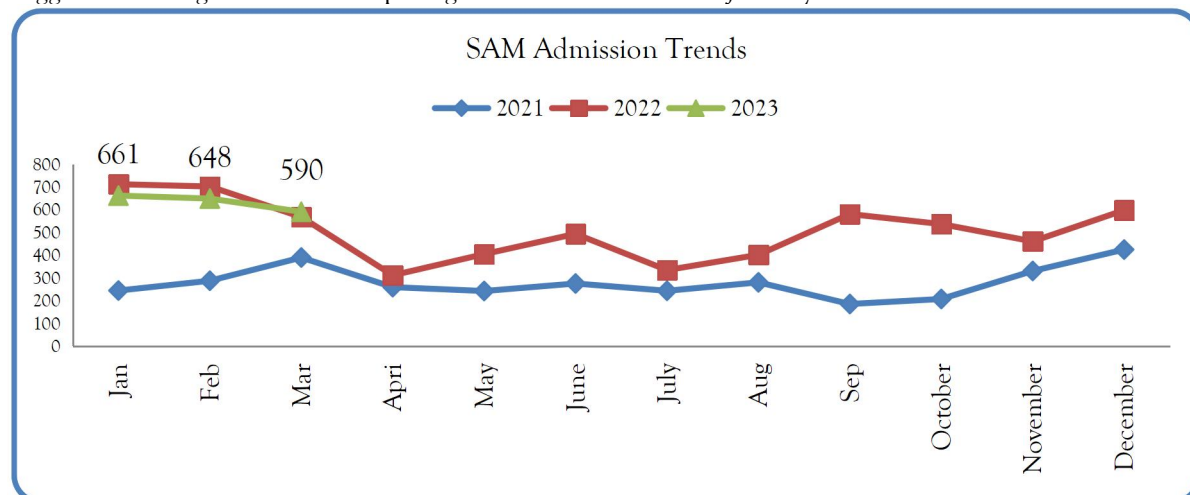


Figure 4: Trends in SAM admissions in Garissa County (Source: KHIS Data)

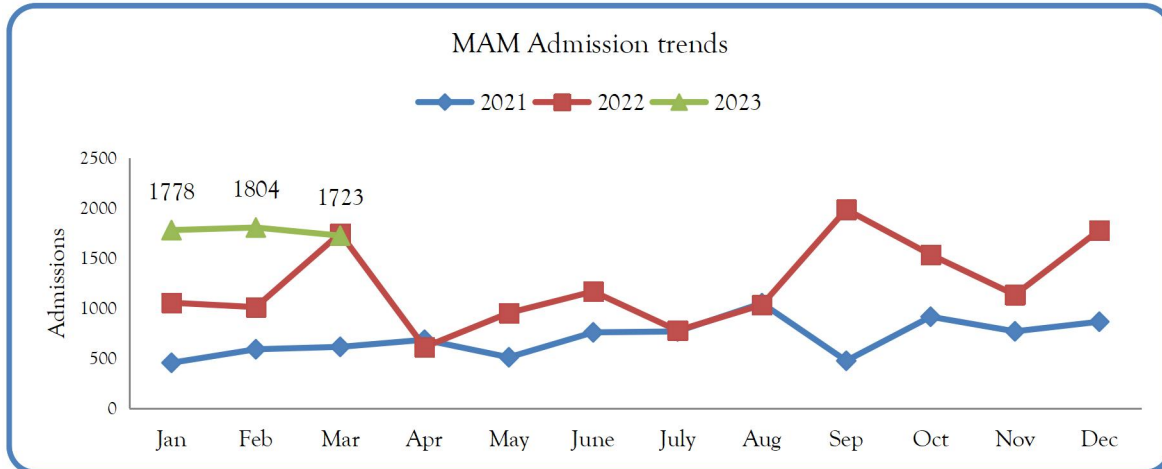


Figure 5: Trends in MAM admissions in Garissa County (Source: KHIS Data)

### Trends in IMAM Program Exit Outcomes

According to the reported KHIS data, cure rates for OTP and SFP in the County remained above the SPHERE thresholds of  $\geq 75\%$  throughout the year (January to December 2022). Defaulter rates for OTP and SFP program in the County have been below the SPHERE thresholds of  $< 15\%$  for most part of the year. High Non - response rate for OTP program was reported in the month of November 2022.

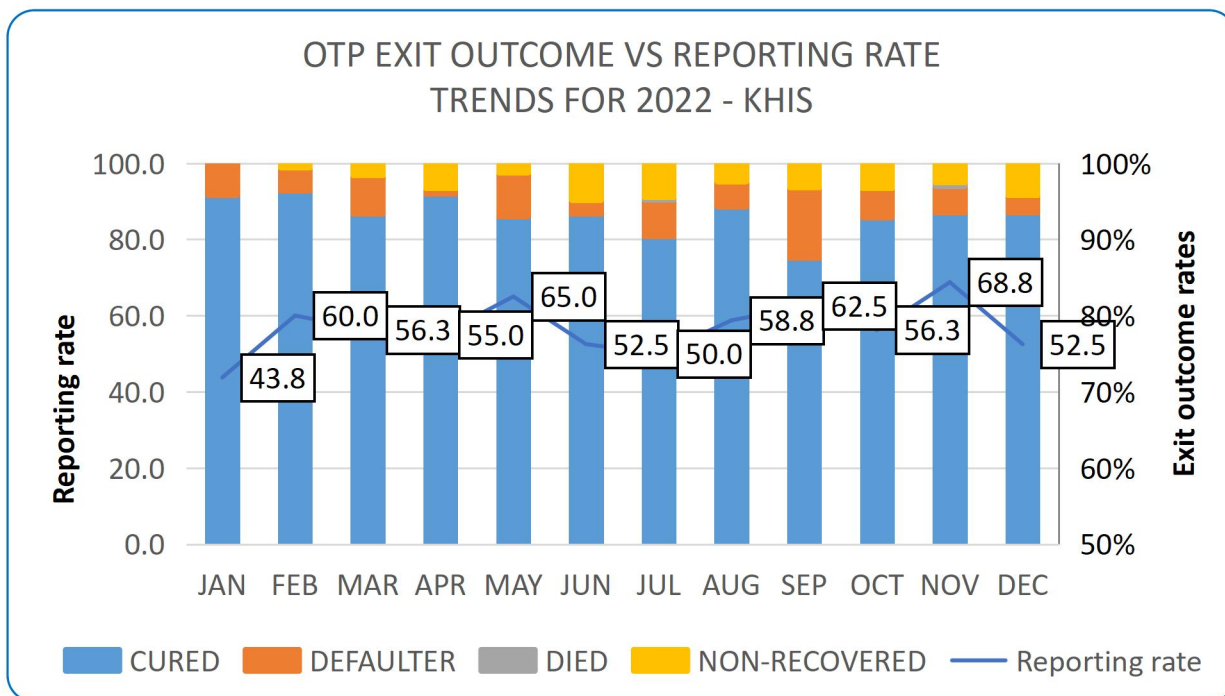


Figure 6: Trends in SAM exit outcomes in Garissa County (Source: KHIS Data)



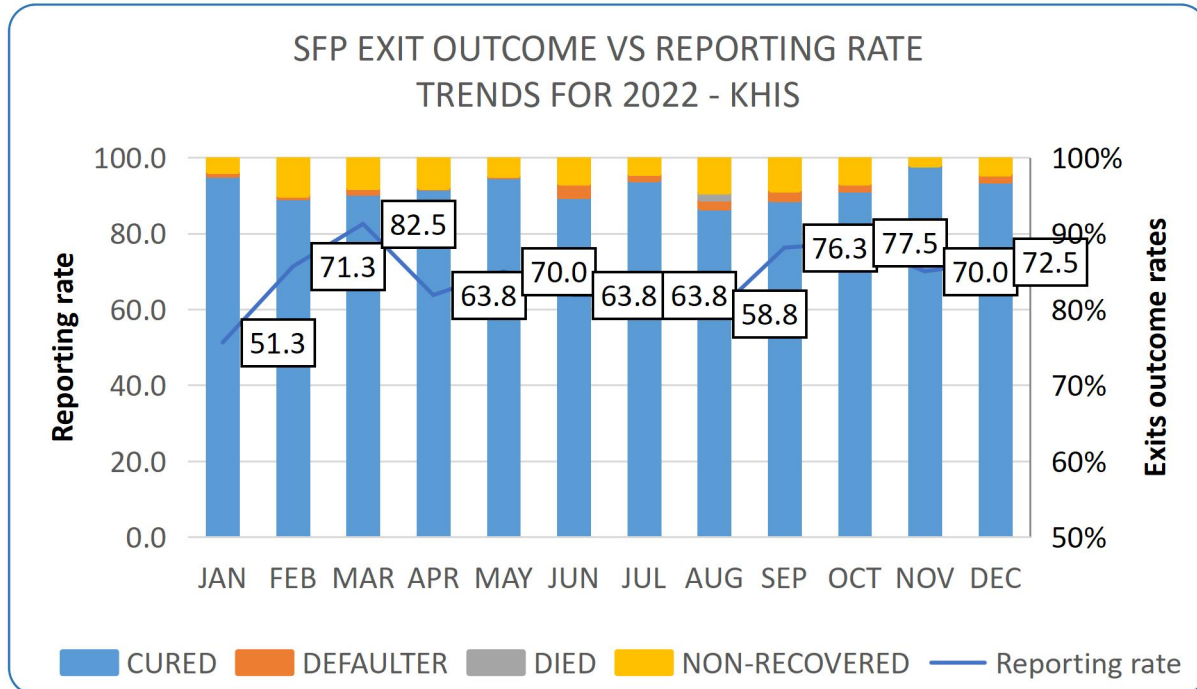


Figure 7: Trends in MAM exit outcomes in Garissa County (Source: KHIS Data)

## Status of implementation of the previous SQUEAC Survey Recommendations (Nov\_2019)

Table 2: Status of the previous Coverage Assessment Recommendations

BARRIER	RECOMMEDATION	STATUS
Distance	Increase number of fixed and mobile OTP sites within the accessible areas	OTP sites was increased across all the 07 Sub Counties. 85 Static Health facilities and 260 outreach sites out of 380 mapped sites offering OTP services
Late treatment seeking	Sensitization of religious leaders, traditional healers and pharmacists on signs and symptoms of childhood malnutrition and OTP	This is done through public baraza meetings and community units linkage
Opportunity cost	Increase number of OTP operational days to everyday	85 Health facilities offer OTP services daily and 260 outreach sites offering services on biweekly basis
	Conduct social gatherings for sensitization of benefits and importance of OTP	Continuously done through facility and community units
Long stay in program	Sensitize community on benefits and importance of seeking childhood malnutrition management at OTP site	Sensitization on going across 85 health facilities and 260 outreach sites spread across the county
Capacity building	Train CHVs and health workers on IMAM and MIYCN to improve nutrition	172 health care workers trained on IMAM

BARRIER	RECOMMEDATION	STATUS
	capacity strengthening for improved health and nutrition services delivery	
Stock out	Strengthen LMIS to improve commodity and supply management	50 Health care workers have been trained on LMIS.
Staff work load	Improve human resource for health ;through recruitment and retention strategies	A total of 58 nutritionists are distributed across the sub counties
Inactive case finding	Heightening program performance monitoring and nutrition surveillance	Monthly SCNF and quarterly CNTF are not held regularly. Routine and periodic data are also review and analyzed
	Scale up of IMAM surge approach for early warning, system capacity adjustment and early action.	50 Health care workers were trained on IMAM surge approach

## Justification for Conducting SQUEAC Survey

The last Coverage (SQUEAC) survey in Garissa County *was* conducted in November 2019. Drought situation in Garissa County has worsened over time following the failure of five successive rain seasons resulting to increased food prices, poor terms of trade, low milk production and consumption. According to KHIS data, the new admissions data show an increasing trend in the new admissions of malnutrition cases from 2021 to 2022 with new admission cases reported in OTP and SFP increasing from 2,990 and 16,923 to 5,879 and 25,568 respectively. Garissa County department of Health has been scaling *up* emergency response interventions including scale up of outreaches and mass screening *targeting children 6-59 months and pregnant and lactating women (PLW)*. There was need for both the county health team and partners to understand the IMAM program performance and its effectiveness. This was important especially during the deteriorating food security and nutrition situation following failed rains and generate recommendations and action points that shall help improve the IMAM coverage as well as identify un-met program needs. There was need to conduct a suitable assessment that will assess change in coverage following implementation of the 2019 SQUEAC survey recommendations. The county health management team identified a full SQUEAC methodology to be appropriate to provide detailed information on boosters and barriers to program access and coverage, as well estimate an overall coverage for both OTP and SFP.

### Objectives of the SQUEAC Survey

The overall objective of the survey was to assess IMAM program coverage for Garissa County while the Specific objectives were;

1. To assess the overall coverage for SAM and MAM in Garissa County
2. To identify barriers and boosters for SAM and MAM uptake
3. To come up with practical recommendations to improve on SAM and MAM coverage in the County
4. To build the capacities of MoH and implementing partners on SQUEAC methodology



## SQUEAC Methodology

### Assessment Area (s)

A full SQUEAC survey was conducted in the entire Tana River County covering all the seven (7) sub counties namely; Dadaab, Balambala, Lagdera, Garissa, Fafi, Hulugho and Ijara. This was done to enable a comparison of the results with the 2019 SQUEAC results. Areas with insecurity were excluded from the survey, those inaccessible due to the March – May 2023 long rains and villages deserted during the drought and the populations had not come back.

### Study design

**Stage 1:** The Stage involved two sub-stage;

- a) Quantitative; Collection and analysis of routine data from all facilities offering IMAM services to identify areas, which suggest low or high coverage.
- b) Qualitative; Collection of information from target communities, beneficiaries and health staff and any other relevant sources to identify barriers, boosters, and areas, which suggest low or high program coverage.

**Stage 2:** Building, testing and confirming the hypothesis of high and low program coverage areas through a small area survey.

**Stage 3:** Wide area survey; to estimate the overall coverage for both SAM and MAM program using Bayesian methodology.

### Ethical Considerations during the Assessment

#### *Covid 19 Infection Prevention*

- During training, Hygiene and sanitation was observed by providing hand washing stations and sanitizers
- Participants reminded to employ protective measures to minimize the risk of Covid-19 infection
- All survey team members provided with facemasks
- All team members encouraged to sanitize their hands immediately before entering a household using soap and water or alcohol-based hand sanitizer
- Anthropometric tools would be disinfected between households
- Where possible social distance would be observed
- Exclusion of any team member showing flu or Covid-19 infection signs from the survey

#### *Consent seeking*

Before beginning of an interview, the data collectors would seek consent from the interviewees to ensure Voluntary participation. All subjects would be involved in the assessment upon their informed consent.

- No forced participation
- Participants have the right not to respond to some questions if they so desire
- Participants may stop participation at any time during the interview if they so desire
- Have a right to know how the information collected will be used



### SQUEAC Team Composition and Training

The SQUEAC survey, led by the County Nutrition Coordinator, composed of six (6) teams conducting all the three (3) stages of the SQUEAC Survey, with each team having two (2) enumerators and one (1) team leader. There were three SQUEAC survey Managers and an overall technical support from NITWG (1 person) in training and quality checks. The teams were trained for three (3) days on both Quantitative and Qualitative data collection tools, qualitative data collections skills including observation, conducting focused group discussions (FGDs) and Key informant interviews.

Table 3: A Summary of Quality Checks throughout the SQUEAC Stages

Stage	Minimum Quality checks
Stage One	<ul style="list-style-type: none"> <li>SQUEAC Managers and Team leader was to oversee with great care and precision how quantitative and qualitative data is collected and analyzed</li> <li>Team to conduct field testing of the tools and taking time to address any difficulties</li> <li>Organize daily debriefings with the entire team to discuss the content of semi-structured interviews and/or group discussions</li> <li>Organize a whole team meeting to synthesize and analyze stage one quantitative and qualitative data in preparation for Stage two (2).</li> <li>Ensuring triangulation of a booster or barrier by source and methods; follow up of what is unclarified (Questions) until redundancy</li> <li>Seeking technical support as necessary</li> </ul>
Stage Two	<ul style="list-style-type: none"> <li>Thorough training on case finding (active and adaptive)</li> <li>Provision of and familiarization with the relevant tools for this stage</li> <li>Constant communication and addressing, immediately, any difficulties being encountered before moving to the next step</li> <li>Checking the quality of collected data and asking for clarifications, if necessary</li> </ul>
Stage Three	<ul style="list-style-type: none"> <li>Allowing review and approval of stages 1 and 2 by the Coverage Task-force before moving to Stage 3</li> <li>Including all the components of PRIOR Development before sample size calculation</li> <li>Thorough training on case finding (active and adaptive)</li> <li>Provision of updated list of villages in sampling for Wide Area Survey</li> <li>Have daily summaries of covered, non-covered and recovering cases</li> </ul>

#### Stage 1: Quantitative and Qualitative data:

- The objective of the Stage will be to identify areas of high and low coverage
- QUANTITATIVE DATA**

The following data was collected by facility (separately for OTP and SFP) by month

- No. of weeks in month with 100% stock availability (RUTF or RUSF)
- No. of weeks in month with 100% stock availability (RUTF or RUSF)
- No. of weeks in month with 100% HR availability
- No. of children screened in community in catchment area of facility
- Village of origin of the admitted cases, defaulters
- Mapping distances to the Service delivery points (SDPs)
- Referral criteria (self, CHVs, Health Care Worker, others)
- No. of new enrollment to IMAM programme



- No. of cases discharged as defaulters from programme
- No. of cases discharged as non-responders from programme
- No. of cases discharged as cured from programme
- Average length of stay for children discharged as cured
- Average length of stay for children discharged as defaulters
- MUAC at admission for all children aged 6-59 months (during 3 months before data collection)
- WHZ score at admission for all children aged 6-59 months (during 3 months before data collection)
- MUAC at discharge Cured
- WHZ score at discharge cured

### QUALITATIVE DATA

The following data was collected by facility (separately for OTP and SFP) by month

- Carers of malnourished children SSI
- CBO/FBO SSI
- CHV - KII
- Traditional Healers - KII
- TBAs/Mid-wives - KII
- Careers of Do Not Attend (DNA) Cases - KII
- Careers of Defaulting cases - KII
- H/Workers - KII
- Health facility - observations
- Women - FGD
- Men - FGD
- NGO representative - KII
- Community leaders - KII
- Teachers - KII
- Lay persons
- Chemist and shop attendants

*Table 4: Sampling for Qualitative Data Collection*

Sampling _ Quantitative & Qualitative Data Review (SDP with IMAM services)					
SUB COUNTY	Level 5	Level 4	Level 3	Level 2	Sub-County Total
DADAAB	0	0	4-GoK	6-GoK	13
BALAMBALA	0	1-GoK	4-GoK	11-GOK	16
LAGDERA	0	1-GoK	2-Gok	9-GoK	12
GARISSA	1-GoK	1-GoK	2-GoK	9-GoK	13
FAFI	0	1-GoK	5-GoK	3-GOK	9
HULUGHO	0	1-GoK	1-Gok	4-GoK	6
IJARA	0	1-GoK	3-Gok	6-GoK	9
Level Sub-total	1	6	21	50	78
Sampled for Qualitative	1	6	7	16	30
Sampling method	Census	Census	Census, Purposive, Randomization		

### Qualitative Data Collection: Investigation Process

Exhaustive data was collected triangulated by **source** and **method** from the Sampled sites. Boosters and barriers to IMAM coverage would be developed through the BBQ (Boosters, Barriers and Questions) tool. Several themes would be explored to include:

- ✓ Understanding of malnutrition and knowledge of the signs of malnutrition
- ✓ Pathways to health care and Knowledge on the existence of treatment
- ✓ Appreciation of the service and quality of the care
- ✓ Community mobilization
- ✓ Barriers and boosters to access and coverage
- ✓ Perception of coverage

### Stage 2: Formulation and verification of hypothesis

The objective of this stage was to confirm areas of high and low coverage based on the boosters and barriers identified in Stage one. A small area survey method was applied during the small area survey. The data collection tools were;

- ✓ Case finding procedure
- ✓ Questionnaire for covered cases
- ✓ Questionnaire for non-covered cases
- ✓ Active case finding data collection form

### Stage 3: Developing the prior and conducting wide area survey

The PRIOR would be set based on findings/ results of Stage One and Stage Two, using Bayesian SQUEAC. The methods involved in PRIOR Setting would include:

- A histogram drawn based on the results from Stage 1 &2
- Unweighted Boosters & Barriers: The Boosters and Barriers will counted
- Weighted Boosters & Barriers: The Boosters and Barriers will be weighted in terms of their relative importance
- A concept/mind map (either drawn manually or using X mind software) clarifying the interconnections between the barriers and boosters. The positive and negative arrows summed to calculate a mode.
- An average of the 4 methods would form the PRIOR, which through the prior estimation template would give the Sample size
- Sample Size Calculation for Wide Area Survey (likelihood survey)
  - It will use a two stage sampling procedure:
    1. Selection of the no. of villages for Wide Area Survey using the formula below and sample the required no. of villages using Spatially stratified systematic sampling

Equation 1: Formula for calculating number of villages for Wide Area Survey

$$n_{\text{villages}} = \left\lceil \frac{n}{\text{average village population}_{\text{all ages}} \times \frac{\text{percentage of population}_{0-59 \text{ months}}}{100} \times \frac{\text{SAM prevalence}}{100}} \right\rceil$$



2. In-community sampling: door-to-door case finding and active & adaptive case finding – using MUAC Tapes, weighing scales & Height boards. **The SINGLE-COVERAGE ESTIMATOR would be used to estimate IMAM Program coverage.** Tools and methods that will contribute to coverage estimation **include;**

- Prior estimation Template
- Bayes calculator
- Team composition & movement plan
- Case finding procedure
- Referral slip
- Questionnaire for covered cases
- Questionnaire for non-covered cases
- Active case finding data collection form

*Table 5: Quality Checks throughout the SQUEAC Stages*

Stage	Minimum Quality checks
Stage One	<ul style="list-style-type: none"> <li>- SQUEAC Managers and Team leader is to oversee with great care and precision how quantitative and qualitative data is collected and analyzed</li> <li>- Team to conduct field testing of the tools and taking time to address any difficulties</li> <li>- Organize daily debriefings with the entire team to discuss the content of semi-structured interviews and/or group discussions</li> <li>- Organize a whole team meeting to synthesize and analyze stage one quantitative and qualitative data in preparation for Stage two (2).</li> <li>- Ensuring triangulation of a booster or barrier by source and methods; follow up of what is unclarified (Questions) until redundancy</li> <li>- Seeking technical support as necessary</li> </ul>
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# SQUEAC SURVEY INVESTIGATION PROCESS

Stage 1 – Quantitative and Qualitative Data Analysis

Stage 2 – Hypothesis Testing and Verification

Stage 3 – Wide Area Survey

## QUANTITATIVE DATA ANALYSIS

### OVERVIEW OF QUANTITATIVE DATA FINDINGS

#### Data Collection method:

- Data obtained from health facilities offering IMAM services
- Quantitative data obtained from In-patient, Outpatient Therapeutic Program and Supplementary Feeding Program beneficiaries' registers, monthly nutrition program reports, stock bins, stock cards and ration cards from all from the entire IMAM implementing health facilities.

#### Major gaps identified:

- Incomplete details of the admission criteria, missing details of the discharge criteria, lack of referral slips, lack of ration cards.
- There were missing return (TCA) dates in some registers
- Cases overstaying in program; some defaulters overstayed in the registers without being exited
- RUTE/RUSF rations issued not indicated in some of the clients' records.
- Mix up of the admission and discharge criteria observed
- No beneficiary ration cards and upon enquiry, the county Health Department had not factored in to procure more. Documentation was being done in outpatient treatment booklet or MCH booklets.
- Monthly reports from some facilities did not tally with the source documents (beneficiary registers).
- In most health facilities there were no CHV activity records; it seemed that there were few cases of referral by CHVs as evidenced by filed MOH 100 referral slips.

**Return distance to the IMAM Service Delivery Point (SDP)**



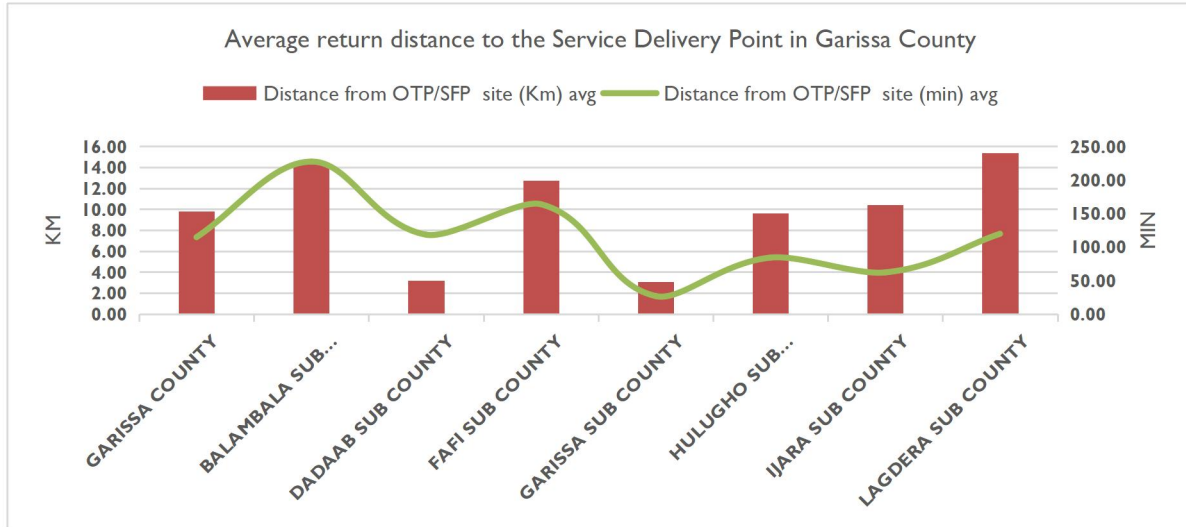
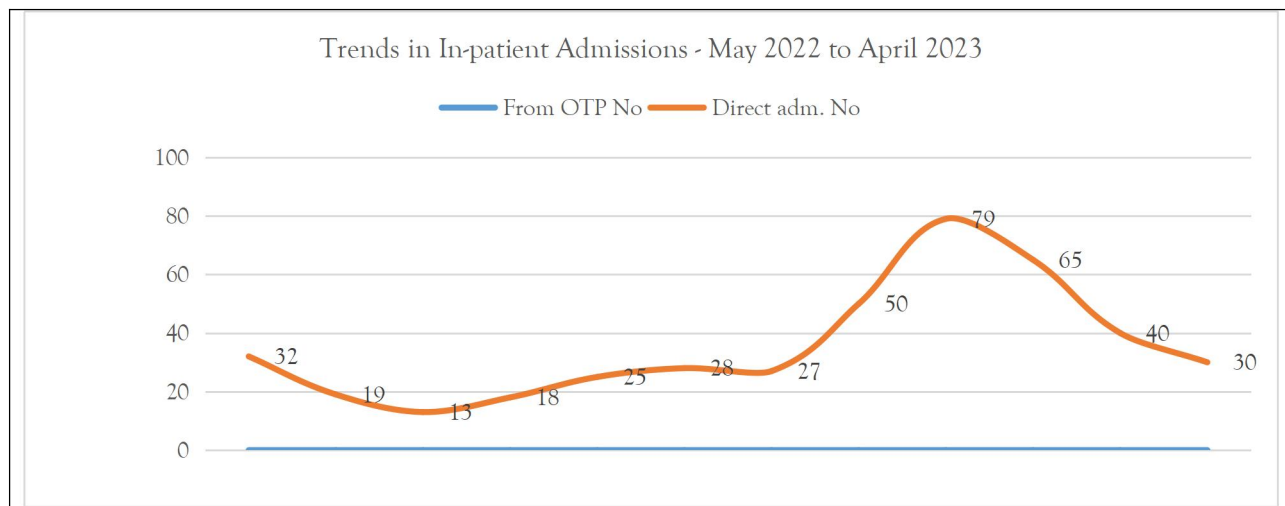


Figure 8: Average return distance to the Service Delivery Point in Garissa County

### In-Patient Program Data

#### Admission Data

Garissa County has eight (8) stabilization centers namely; Garissa Teaching and Referral Hospital, Ifitin, Ijara, Hulugho, Balambala, Fafi, Dadaab and Modogashe. All in-patient admissions were direct into the stabilization centers with no case of deterioration from OTP program being reported, indicating minimal or no cases deterioration. More In-patient admissions observed in Garissa Sub County. The main reason for in-patient admission was diarrhea.



Event/Condition	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23
Common Diseases: URTI	M	H	H	M	M	M	H	H	M	M	M	H
Common Diseases: Diarrhea	M	L	L	L	L	M	H	H	H	M	M	H
Common Diseases: Malnutrition	M	M	M	M	M	M	H	H	H	H	H	H
Common Diseases: Malaria	L	L	L	M	M	M	M	M	H	M	M	H
CD4: Common Diseases: Allergic,	H	H	H	H	M	M	M	H	H	M	M	H



Hintis													
Common foods (maize flour, rice and beans, milk) prices	H	L	M	M	M	M	L	M	M	M	M	M	M
In-Migration	L	H	H	L	L	L	H	H	H	H	H	H	H
Out-Migration	H	H	H	H	M	M	M	M	M	M	M	M	M
Insecurity / clashes	L	L	L	L	R	R	R	R	L	L	R	R	R
Drought / famine	M	M	H	H	M	M	M	L	L	M	L	L	L
Key:	H-High,			M-Medium,			L-Low,			RH-rarely/no			

Figure 9: Trends in In-patient Admissions in Garissa County

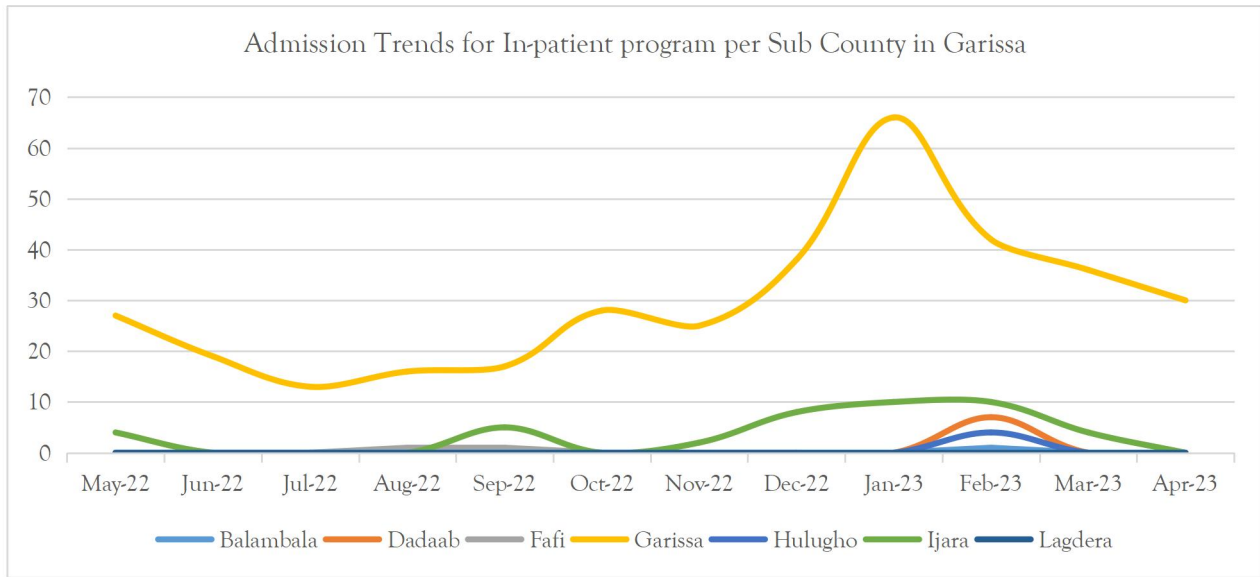


Figure 10: Admission Trends for In-patient program per Sub County in Garissa

### In-Patient Program Performance Indicators

Only 6% of the total exits were transferred to OTP. On average, all the performance indicators were within the SPHERE thresholds of  $\geq 75\%$  cure rate,  $< 15\%$  defaulter rate and  $< 10\%$  death rate. High defaulter rates reported in January and February 2023, with more in-patient defaulters being reported in Garissa and Ijara Sub Counties. Most of the defaulters refused treatment because caregivers had left other children at home with no adequate care or family was migrating. In-patient defaulting was common among the nomadic pastoralist. The reported deaths were attributed to late treatment seeking when the condition is already critical. The median Average length of stay (ALOS) in in-patient program at discharge cured is 13 days (median value =45).

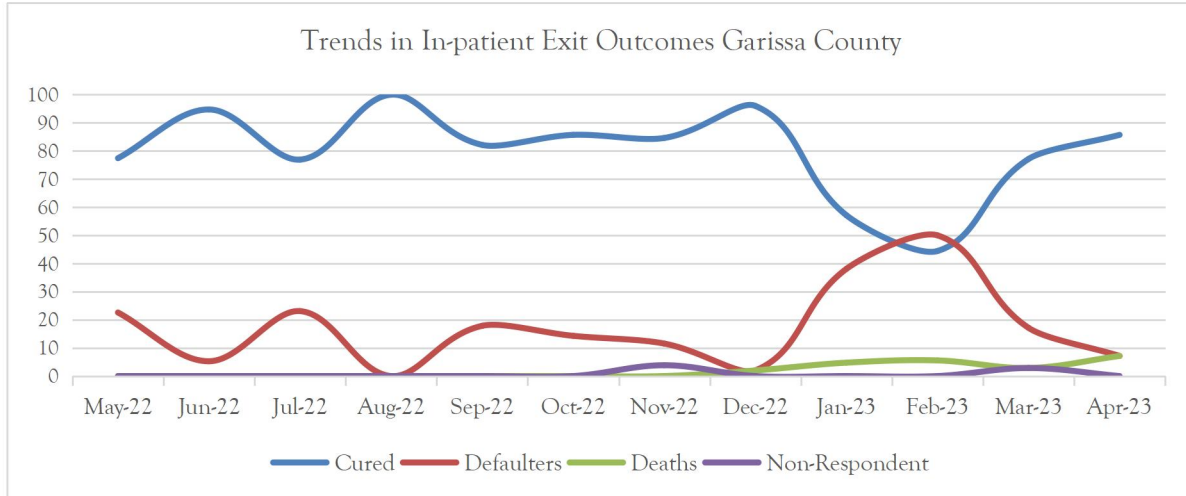


Figure 11: Trends in In-patient Exit Outcomes in Garissa County

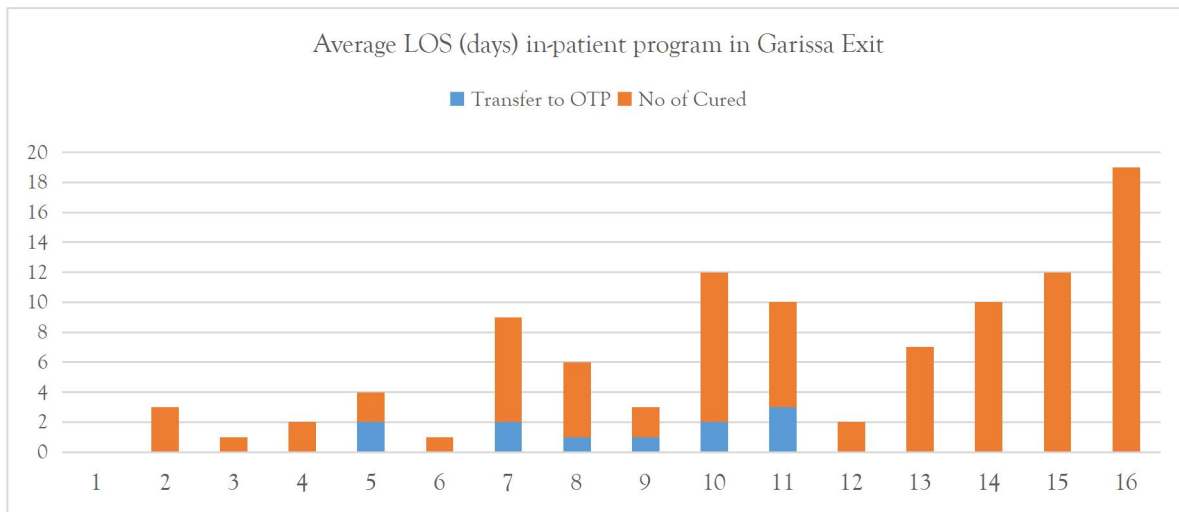


Figure 12: Average LOS (days) in-patient program in Garissa Exit

### Outpatient Therapeutic Program (OTP)

#### Referrals and return distance to the OTP site

The major referral mode into OTP in Garissa County is self-referral at 71%, followed by CHVs and Health facility referrals at 12% each. Self-referral is a good indication of appreciation of the SAM treatment program by caregivers, which in turn contributes to positive health seeking behavior. The major admission source into OTP program is direct (98%) where the admissions are not relapse cases, which can also be associated with to positive health seeking behavior. Upon analysis of the return distance, OTP caregivers indicated to have spent a return journey of 60-120 minutes when seeking for IMAM services.

Garissa County utilizes all the three admission criteria into IMAM program as outlined in the IMAM guideline for Kenya. The predominant admission criteria into OTP in the county is WHZ score (74% of the total admissions assessed).

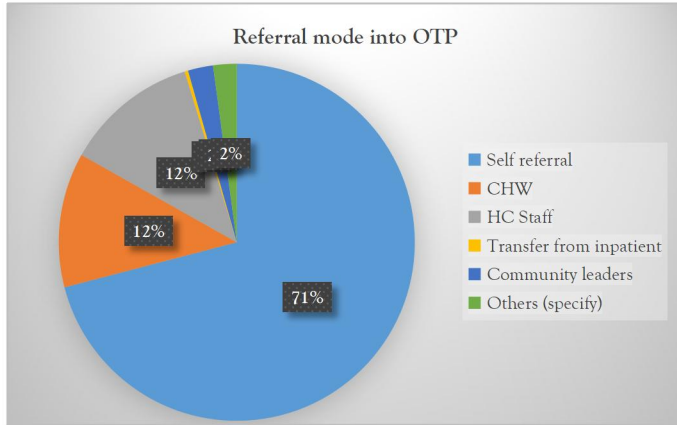


Figure 13: Referral mode into OTP

### Return Distance to the Service Delivery Point

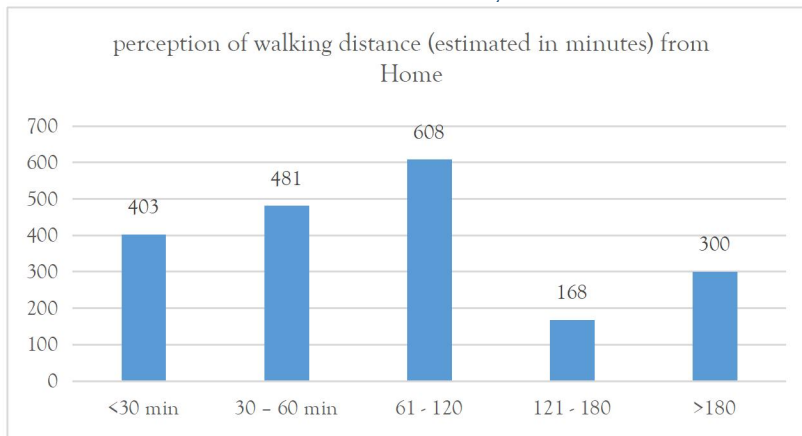


Figure 14: Perception of walking distance (estimated in minutes) from Home

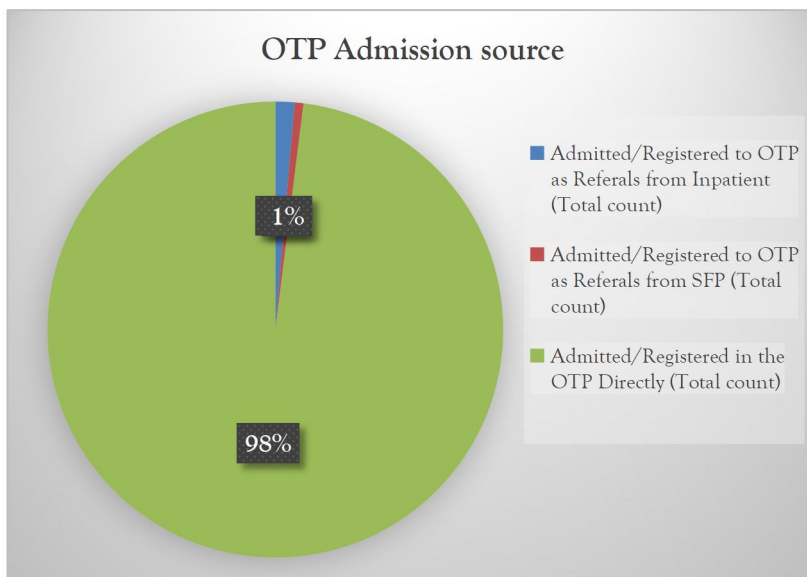


Figure 15: OTP Admission source

### Trends in OTP Admissions

Generally, new cases were observed to increase in 2022 compared to the previous years, attributed to the prolonged drought season. During the analysis period (May 2022 to April 2023), increasing admissions over time were observed, with cases being on the increasing trend from September 2022 to April 2023. This was majorly attributed to heightened case finding through mass screening, family MUAC and outreach activities, which are part of the scaled up drought response activities.

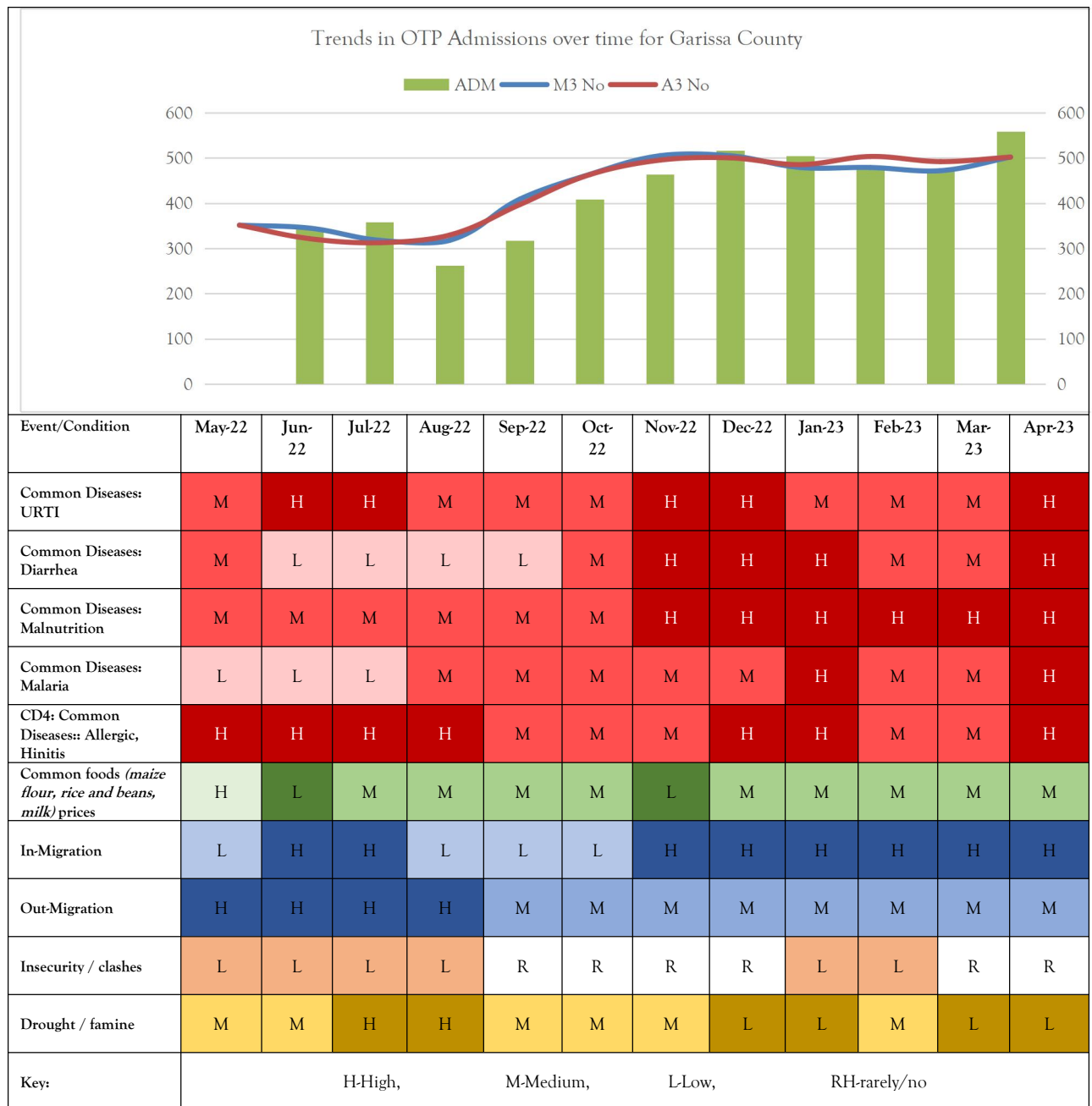


Figure 16: Trends in OTP Admissions over time for Garissa County

OTP admission trends per facility reveal which area add to county performance and area that pull down county performance. Performance in admission is subjective to number parameters that includes prevalence, catchment population (facility workload) and facility activeness. Some facility may have higher number of admission cases but when compared to expected caseload/U5 population performance is low.

Looking at Balambala SC; Balambala SCH and Hadley dispensary admitted most SAM cases, compared to total population of under 5 within the same facilities, the proportion of SAM cases admitted is high than 20% in Balambala SCH, Hadley dispensary and Shimbrey dispensary. (Fig. 17)

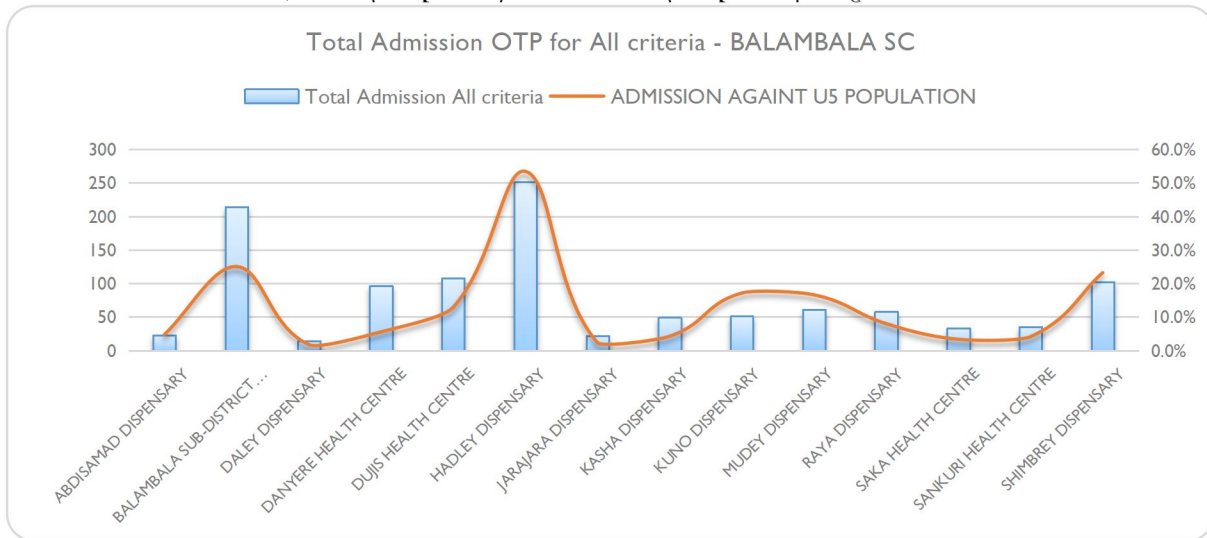


Figure 17: Total Admission OTP for All criteria in Balambala Sub County

Looking at Dadaab SC; Dertu HC admitted most SAM cases, compared to total population of under 5 within the same facilities, the proportion of SAM cases admitted is high than 10% in Benane dispensary and Malaylay dispensary. (Fig. 18)

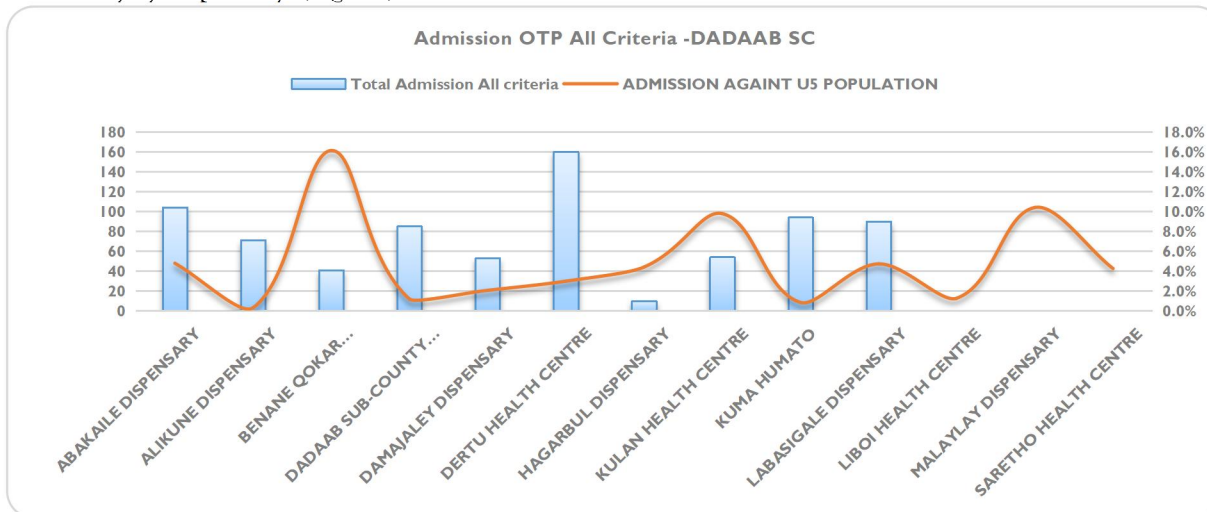


Figure 18: Admission OTP All Criteria -Dadaab Sub County

Looking at Fafi SC; Alinjungur HC admitted most SAM cases, compared to total population of under 5 within the same facilities, All the facility in Fafi sub county poorly performed in the proportion of SAM cases admitted, the highest facility admitted less than 5% Amuma dispensary. ( Fig. 19)

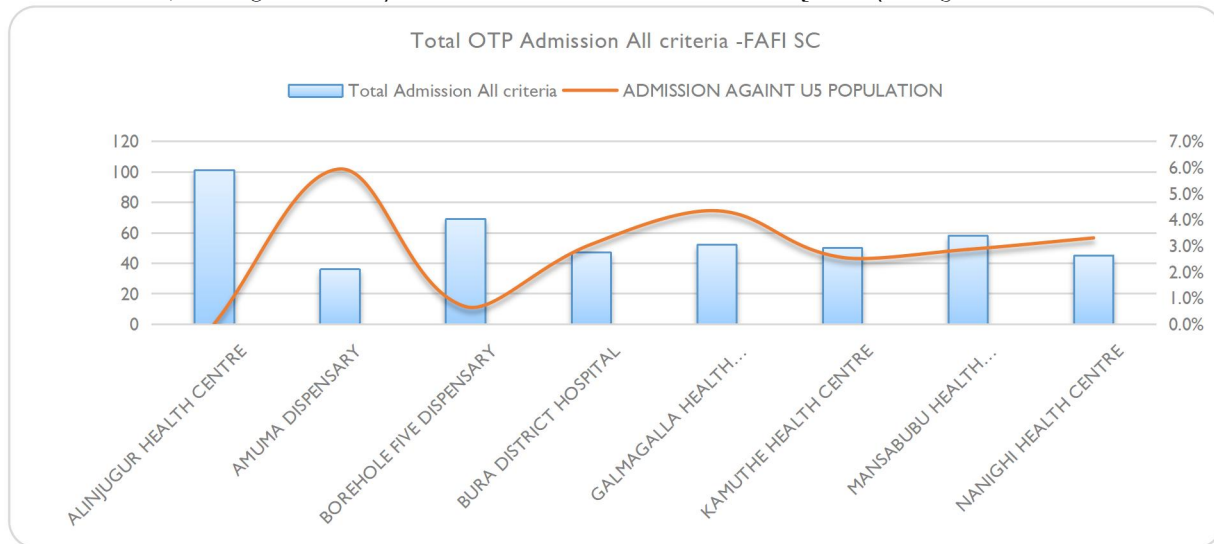


Figure 19: Admission OTP All Criteria -Fafi Sub County

Looking at Garissa SC; Garissa CRH admitted most SAM cases, compared to total population of under 5 within the same facilities, the proportion of SAM cases admitted is high than 15% in only Garissa CRH and Nepttidi dispensary. (Fig. 20)

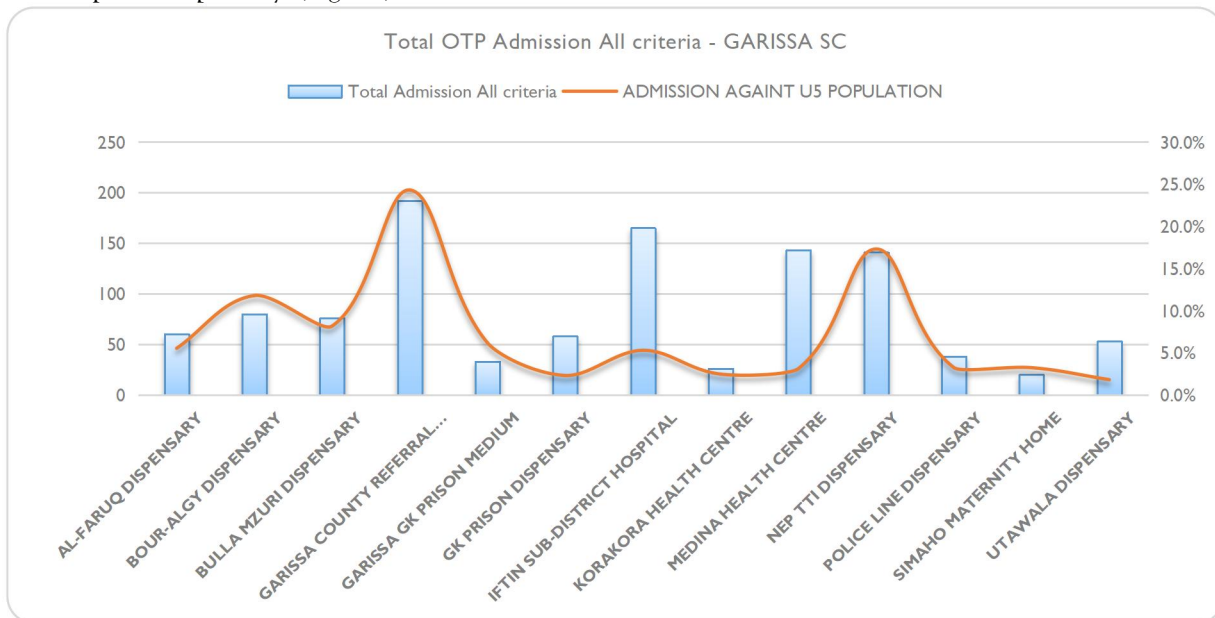


Figure 20: Admission OTP All Criteria -Garissa Sub County



Looking at Hulugho SC; Sangailu HC admitted most SAM cases, compared to total population of under 5 within the same facilities, All the facility in Hulugho sub county poorly performed in the proportion of SAM cases admitted to OTP, the highest facility admitted less than 5%; Bodhai dispensary. ( Fig. 21)

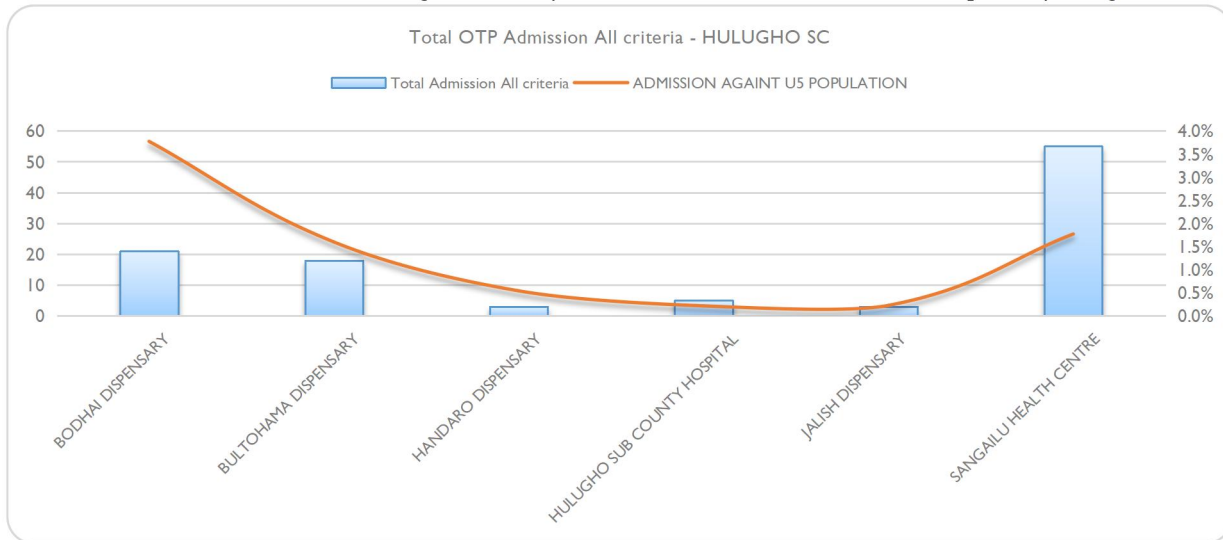


Figure 21: Admission OTP All Criteria - Hulugho Sub County

Looking at Ijara SC; Furqan dispensary admitted most SAM cases. Compared to total population of under 5 within the same facilities, the proportion of SAM cases admitted is high than 20% in only Furqan dispensary the other facilities admitted less than 5%. (Fig. 22)

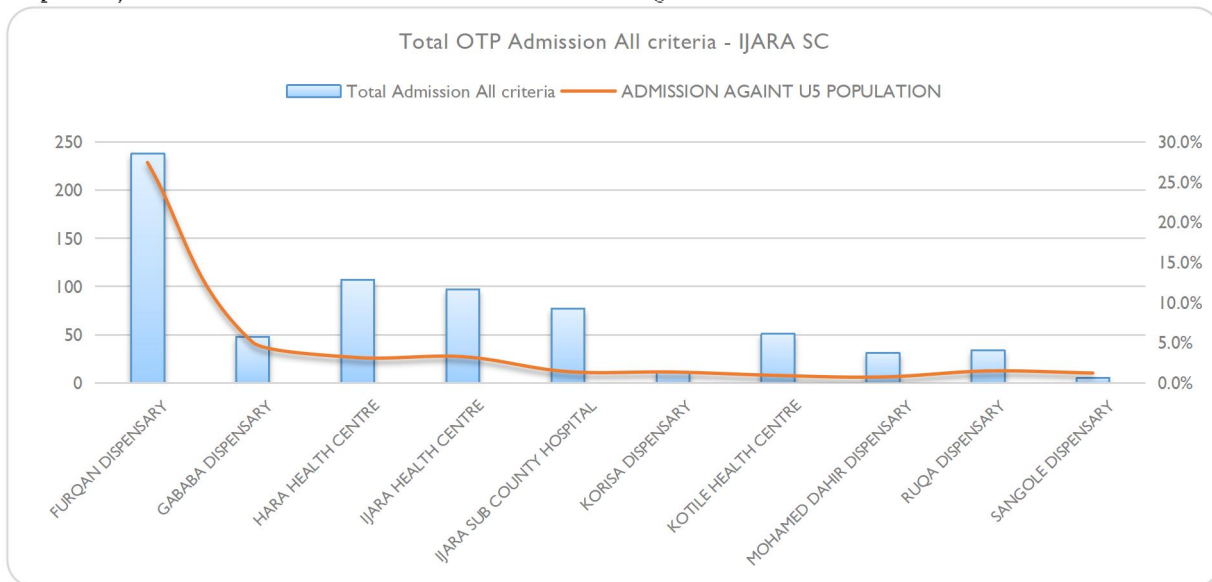


Figure 22: Admission OTP All Criteria - Ijara Sub County



Looking at Lagdera SC; Most facility had high number of OTP admission, Afwen dispensary admitted most SAM cases. Compared to total population of under 5 within the same facilities, the proportion of SAM cases admitted is high than 15% in only Jilango dispensary, most of the facilities admitted less than 15%. (Fig. 23)

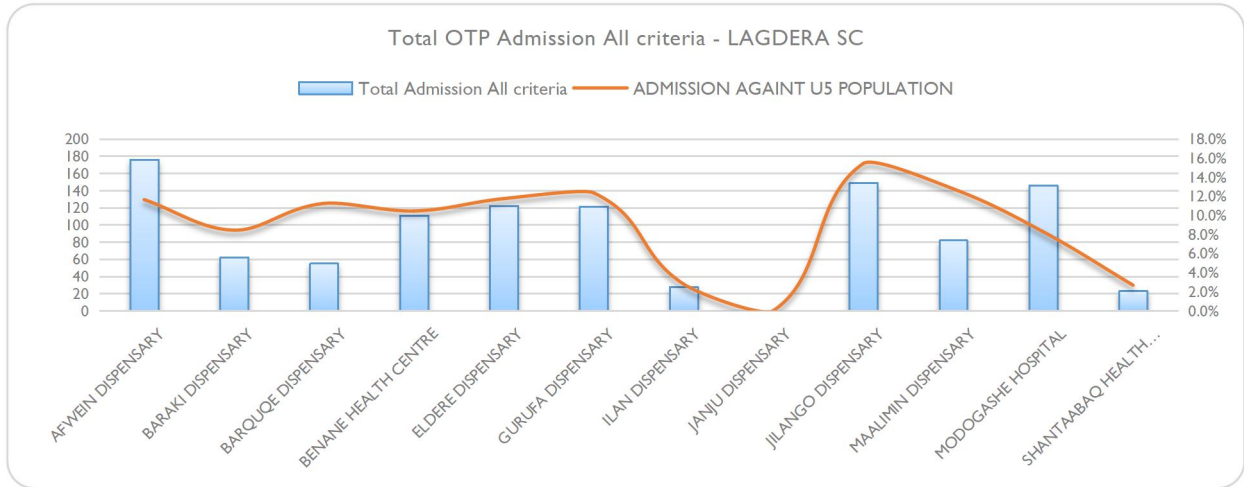


Figure 23: Admission OTP All Criteria - Lagdera Sub County

### Weight-for-Height Z score at Admission into OTP

Most admissions were within the recommended admission thresholds for severe acute malnutrition (< -4 SD to  $\geq$ -3 SD) based on WHZ score, with median value being 2,038. Few wrong admissions when cases are not SAM by WHZ score observed due to mix up of the admission criteria, majorly in Balambala, Dadaab and Garissa Sub Counties.

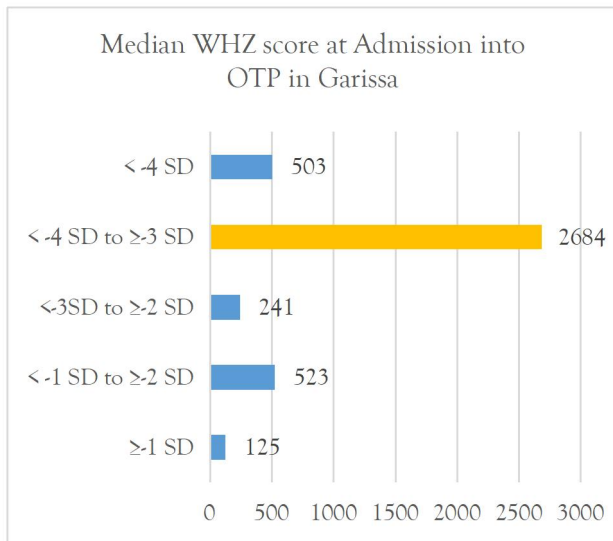


Figure 24: Median WHZ score at Admission into OTP in Garissa

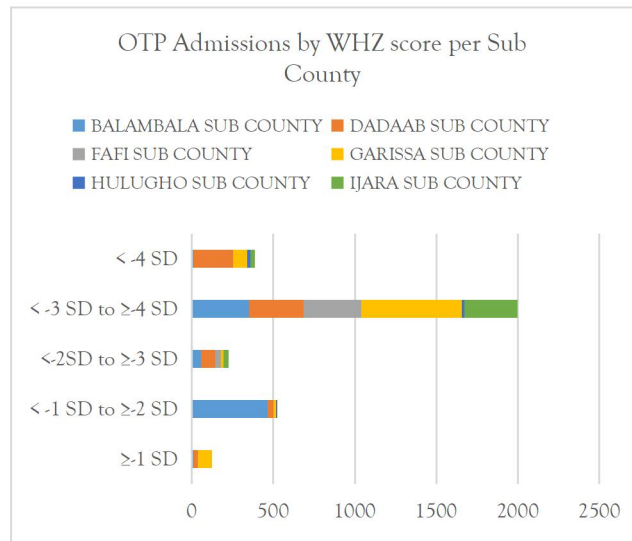


Figure 25: OTP Admissions by WHZ score per Sub County

### MUAC at Admission into OTP

The median MUAC at admission into OTP in Garissa is 11.2cm (median value - 683.5), indicating early admissions. However, late MUAC admissions into OTP observed, indicating poor health seeking behaviors,

majorly in Lagdera, Dadaab and Garissa Sub Counties. The wrong admissions of above or equal to 11.5cm were attributed to a mix up of the admission criteria.

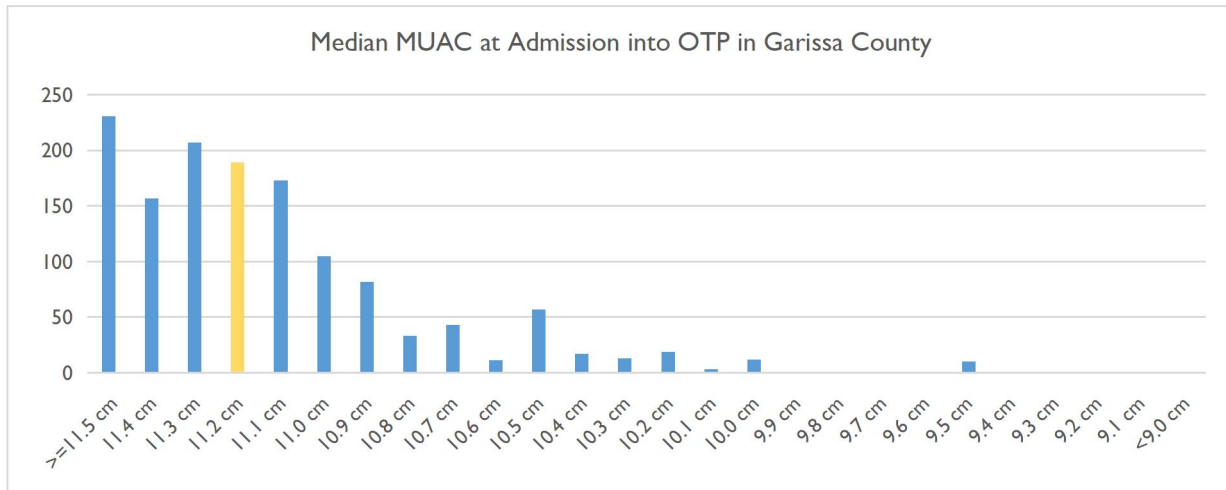


Figure 26: Median MUAC at Admission into OTP in Garissa County

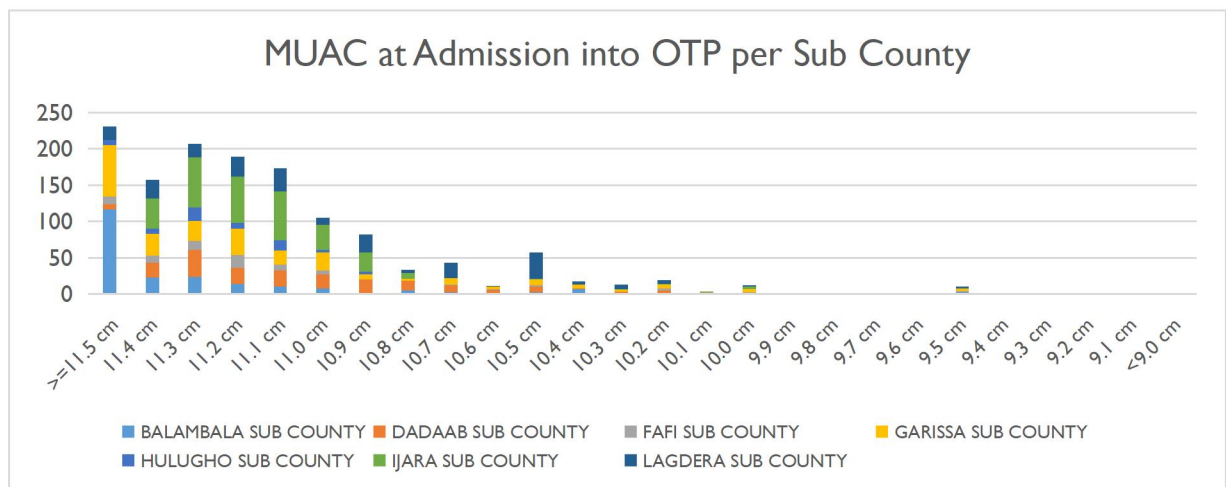


Figure 27: MUAC at Admission into OTP per Sub County

### OTP Exit Outcomes

Overly, Garissa County is performing poorly against the SPHERE thresholds for OTP program, with high defaulter rates being observed throughout the 12-month review period, with an exception in May 2022, June 2022 and January 2023. All the sub counties affected by the high defaulter rates except Garissa Sub County. High default rates were attributed to migration and maternal workload, with little follow up of health services by caregivers.

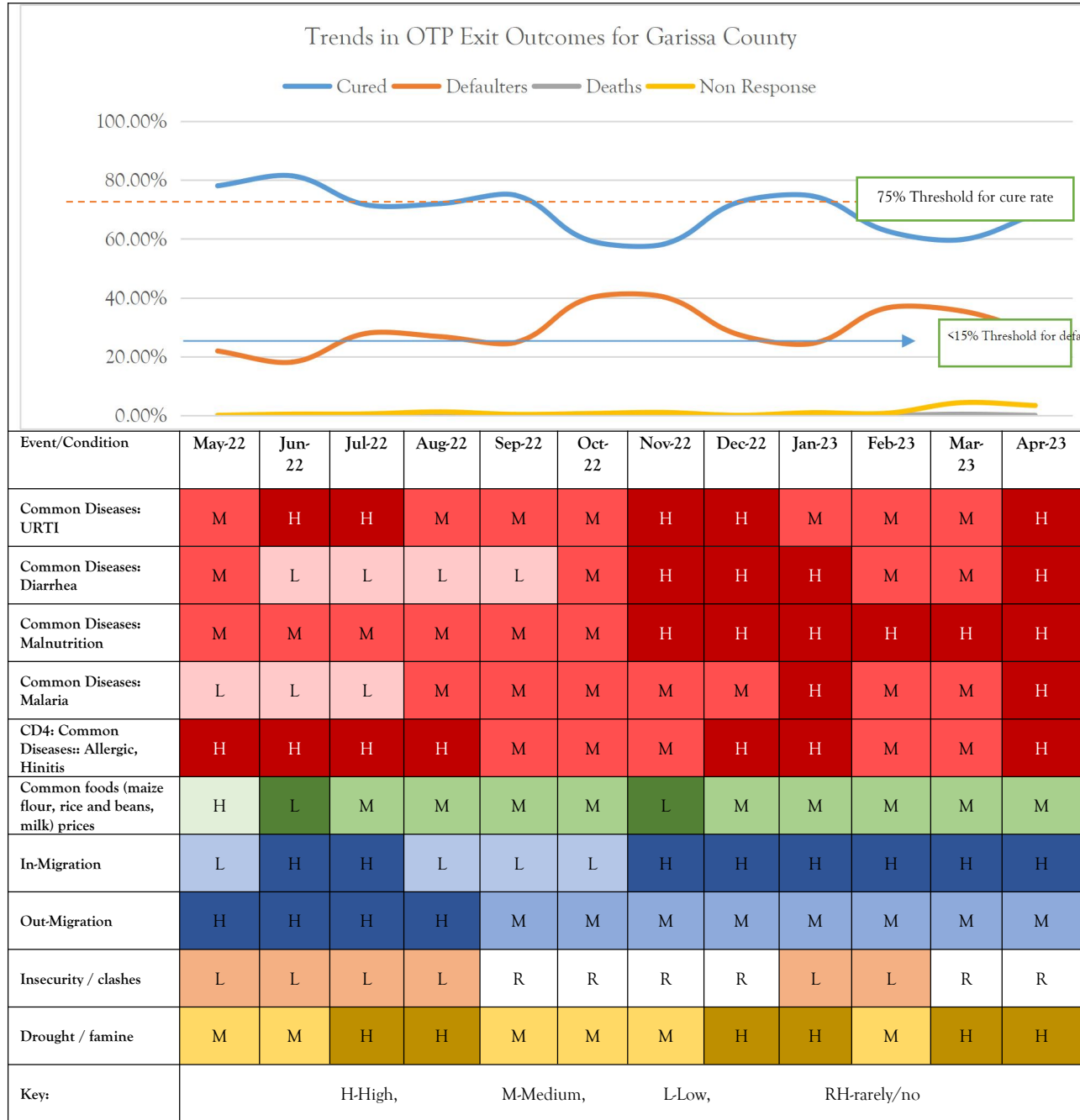


Figure 28: Trends in OTP Exit Outcomes for Garissa County against the seasonal calendar

The county performed slightly below SPHERE standard, The county had cure rate of 69% (<75%) and a defaulter rate of 30% (>15%), 5 out of 7 sub counties are bellow SPHERE standard with an exception of Garissa SC and Lagdera SC, both had a recovery rate of 80% and above but only Garissa SC had a defaulter rate of less than 15%. (Fig. 29)

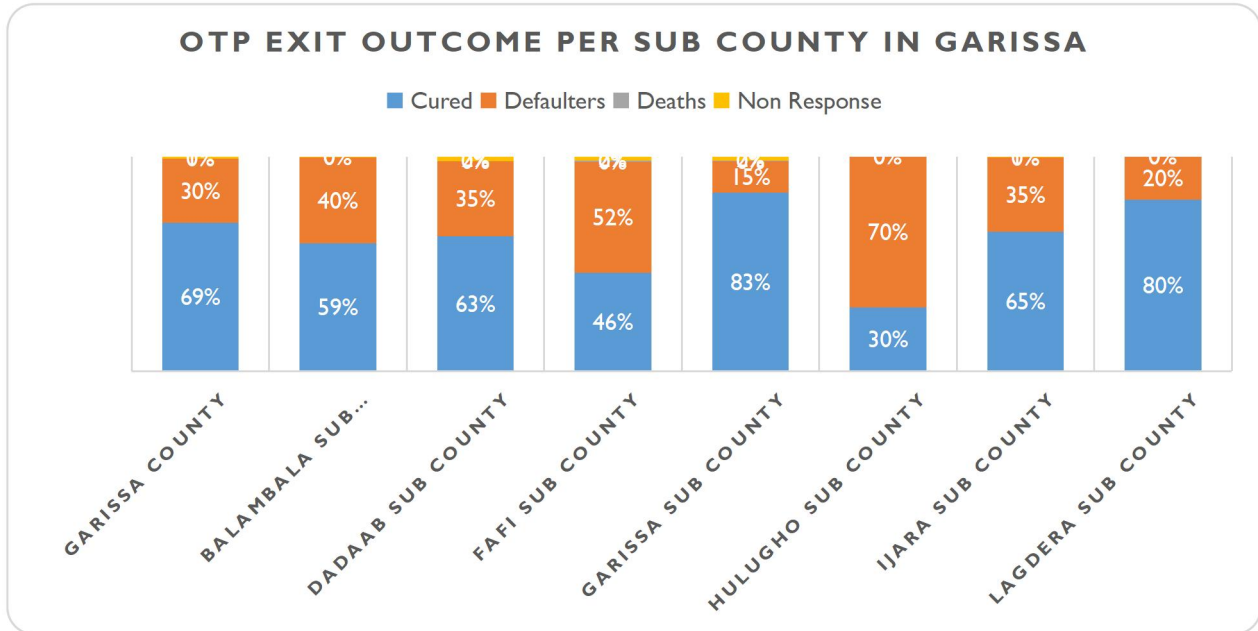


Figure 29: OTP Exit Outcome per Sub County

Looking at exit outcome per facility in Balambala SC, only 4 out of 14 facilities performed within SPHERE standard; Dujis , Jarjara , Kuno and Mudey dispensaries. The other performed below the standard, with Balambala SCH and Shimrey dispensary been worst performing. (Fig. 30)

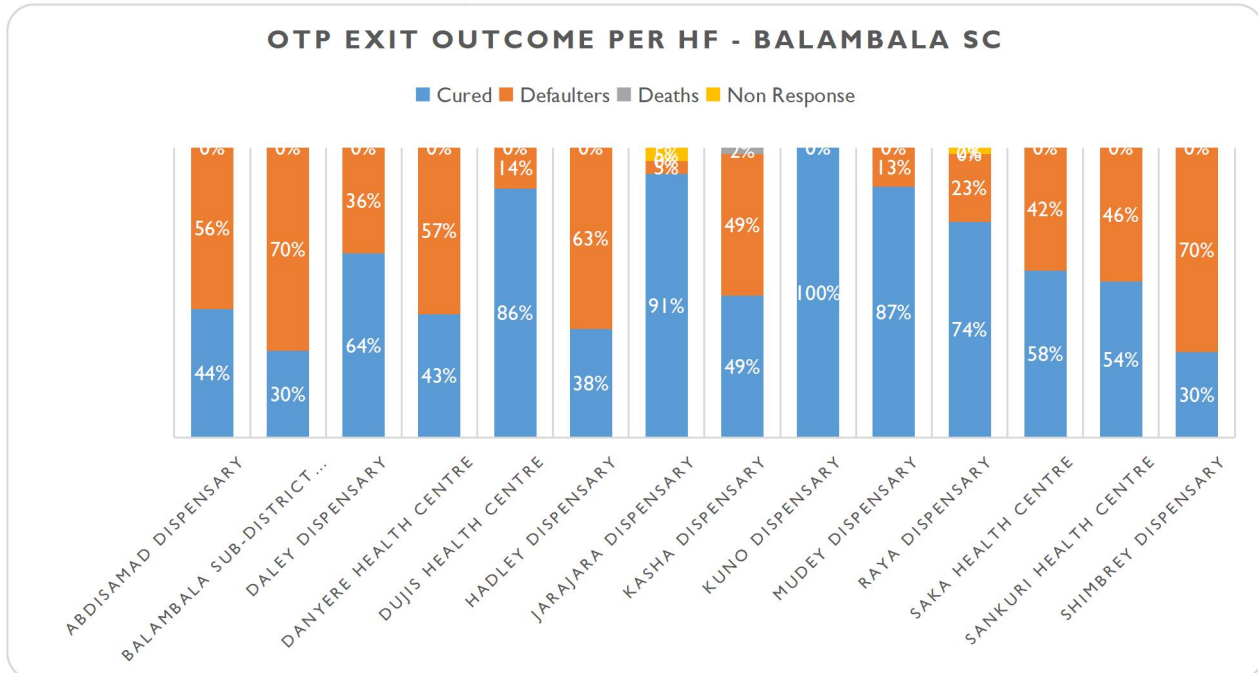


Figure 30: OTP Exit Outcome per H/F in Balambala Sub County



Looking at exit outcome per facility in Fafi SC, only 2 out of 8 facilities performed within SPHERE standard; Amuma and Borehole five dispensaries. The other performed below the standard, with Mansabubu HC been worst performing. (Fig. 31)

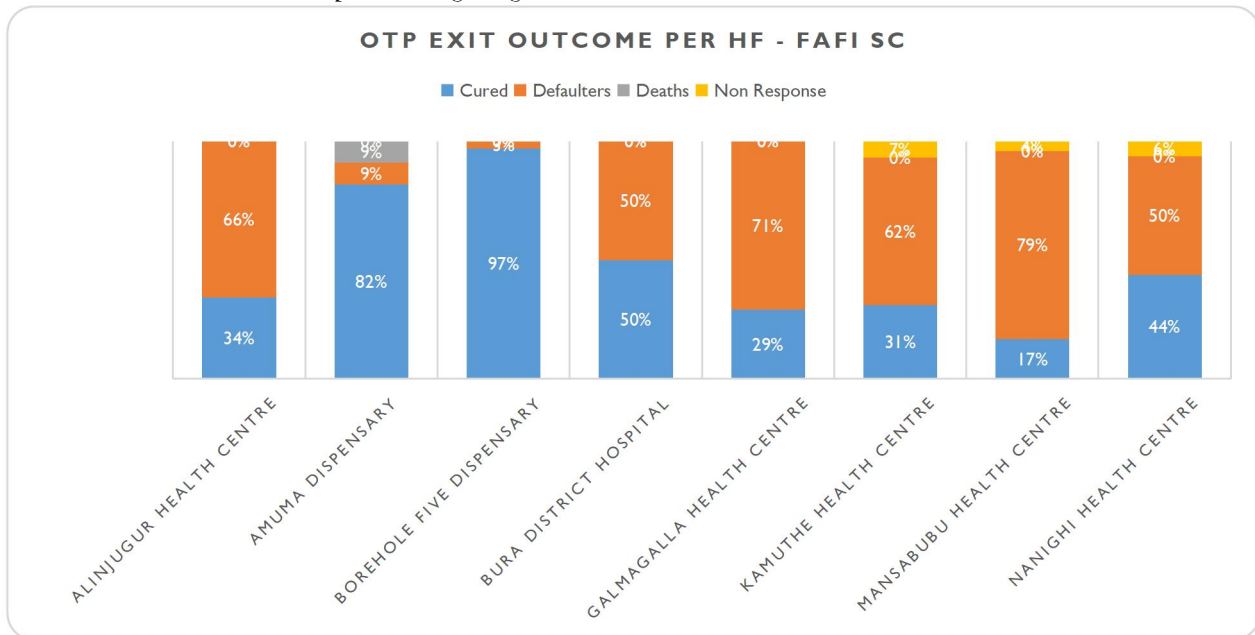


Figure 31: OTP Exit Outcome per H/F in Fafi Sub County

Looking at exit outcome per facility in Garisa SC, only 5 out of 13 facilities performed within SPHERE standard; Bour-algy dispensary, Garissa SCH, Iftin SC, Medina HC and Neptti dispensary. The other performed below the standard, with Korakora HC been worst performing with 100% defaulter rate. (Fig. 32)

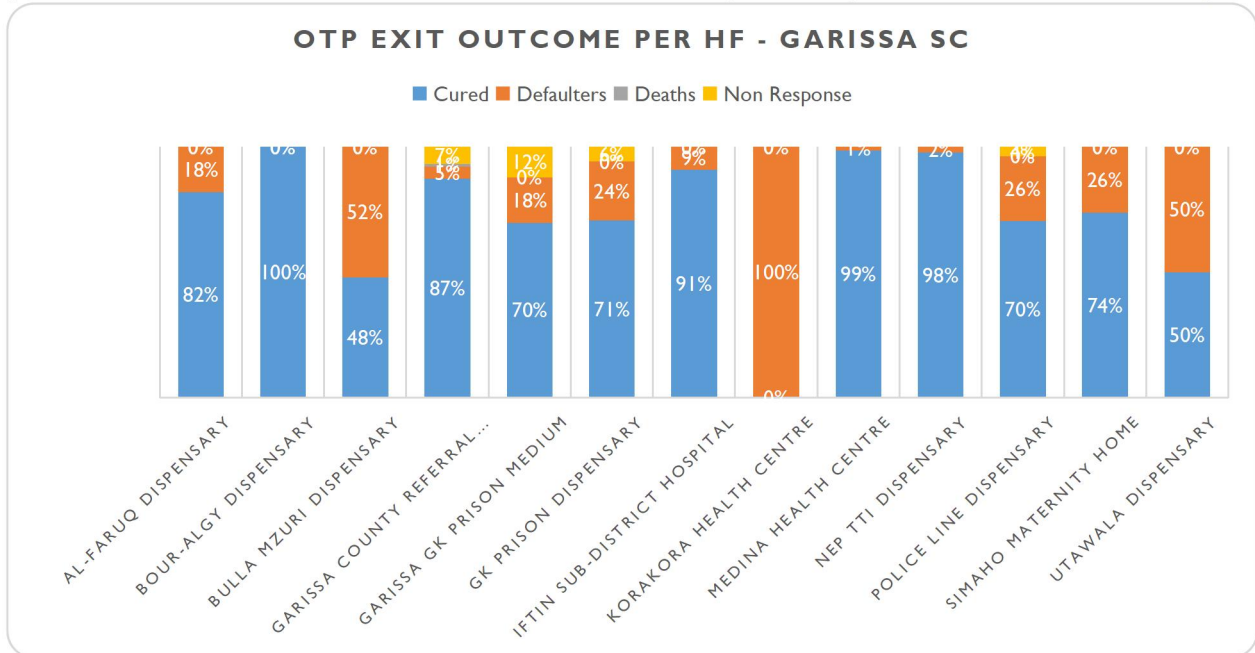


Figure 32: OTP Exit Outcome per H/F in Garissa Sub County



Looking at exit outcome per facility in Dadaab SC, only 7 out of 13 facilities performed within SPHERE standard with 100% recovery rate. The other performed below the standard, with Kulan HC been worst performing with 80% defaulter rate. (Fig. 33)

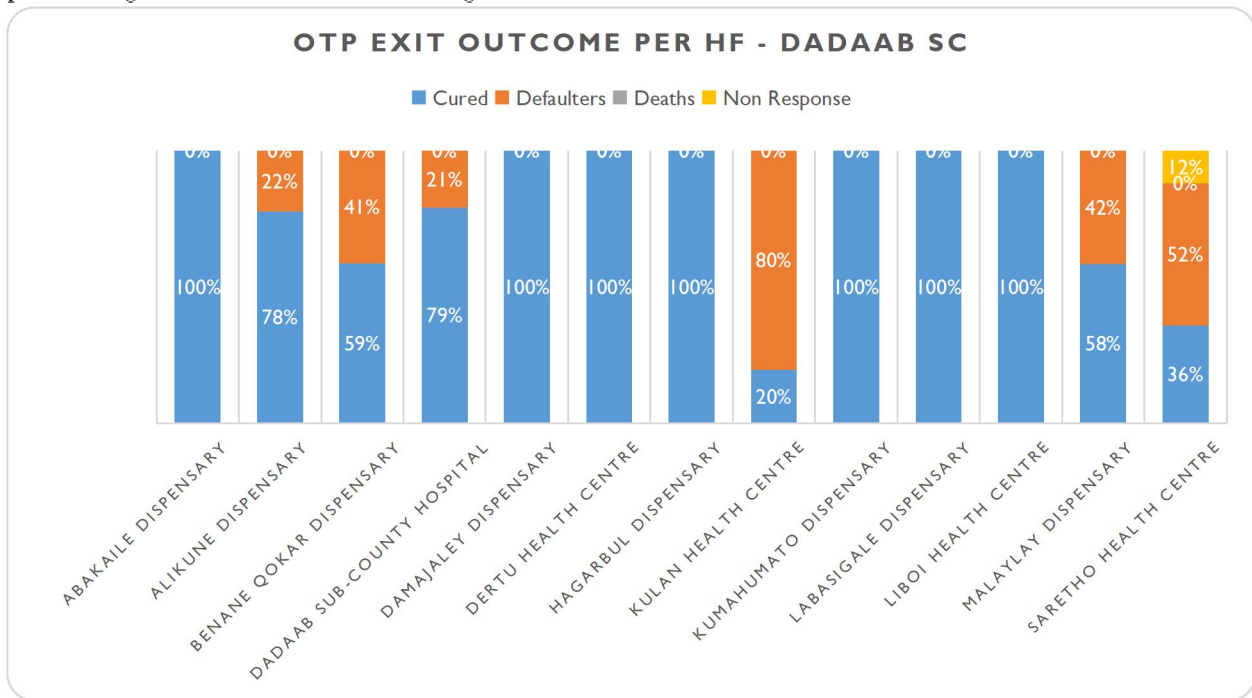


Figure 33: OTP Exit Outcome per H/F in Dadaab Sub County

Looking at exit outcome per facility in Hulugh SC, none out of 6 facilities performed within SPHERE standard; All performed below the standard, with Handaro dispensary been worst performing with 100% defaulter rate. (Fig. 34)

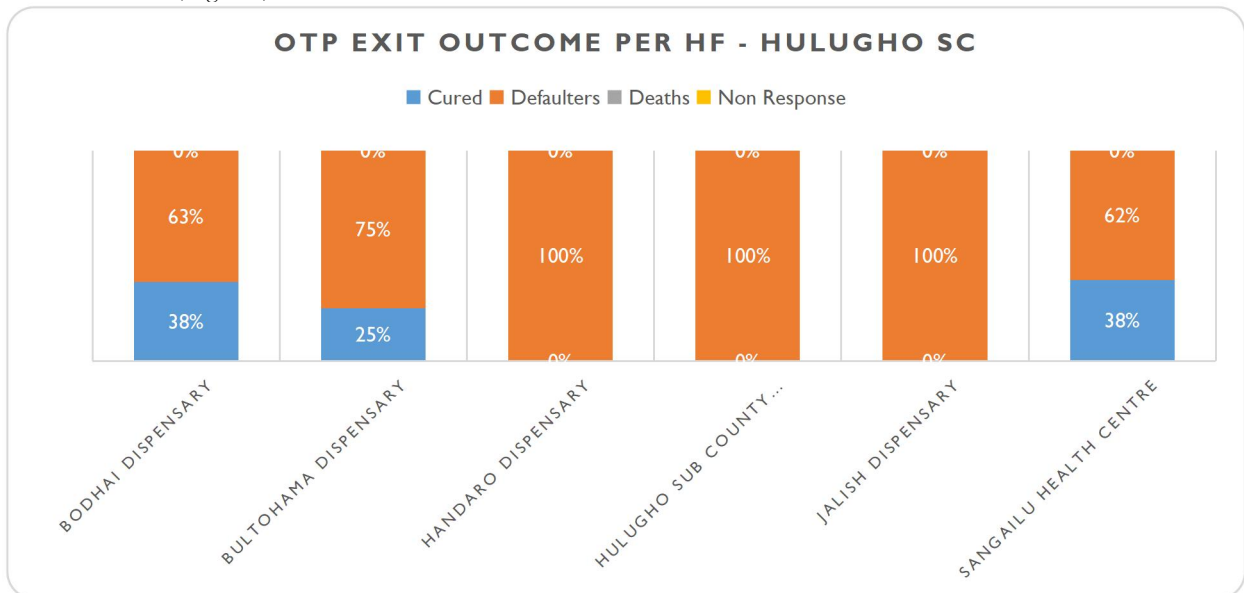


Figure 34: OTP Exit Outcome per H/F in Hulugh Sub County

Looking at exit outcome per facility in Ijara SC, only 3 out of 10 facilities performed within SPHERE standard; Ijara SCH, Kotile HC and Ruqa dispensary. The other performed below the standard, with Hara HC and Sangole dispensary been worst performing with 100% defaulter rate. (Fig. 35)

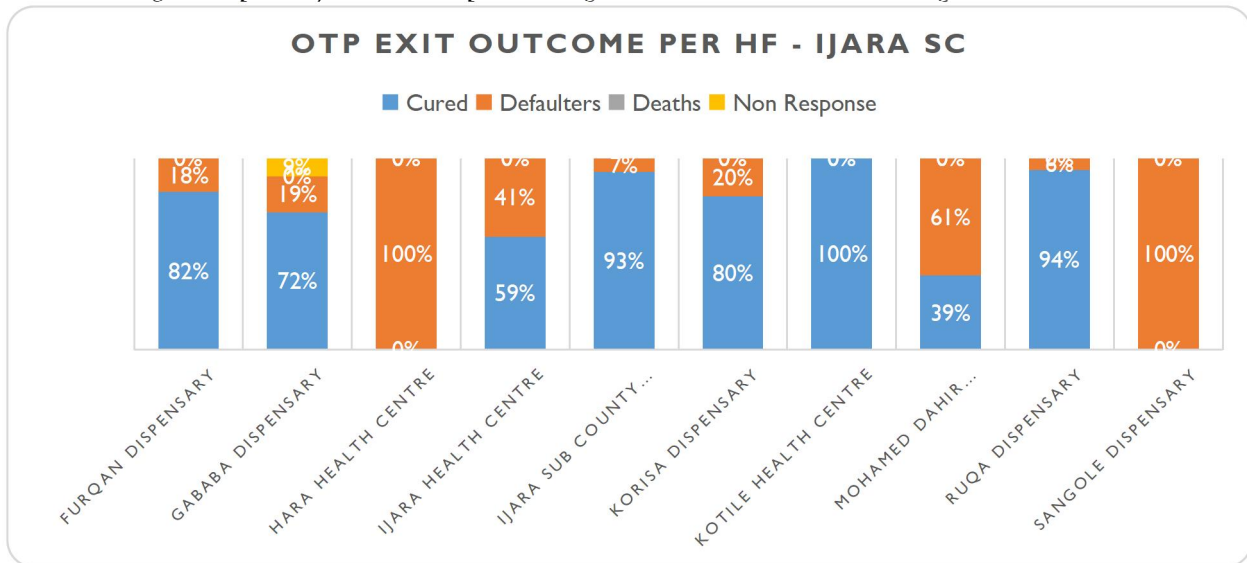


Figure 35: OTP Exit Outcome per H/F in Ijara Sub County

Looking at exit outcome per facility in Lagdera SC, only 3 out of 10 facilities performed within SPHERE standard; Ijara SCH, Kotile HC and Ruqa dispensary. The other performed below the standard, with Hara HC and Sangole dispensary been worst performing with 100% defaulter rate. (Fig. 35)

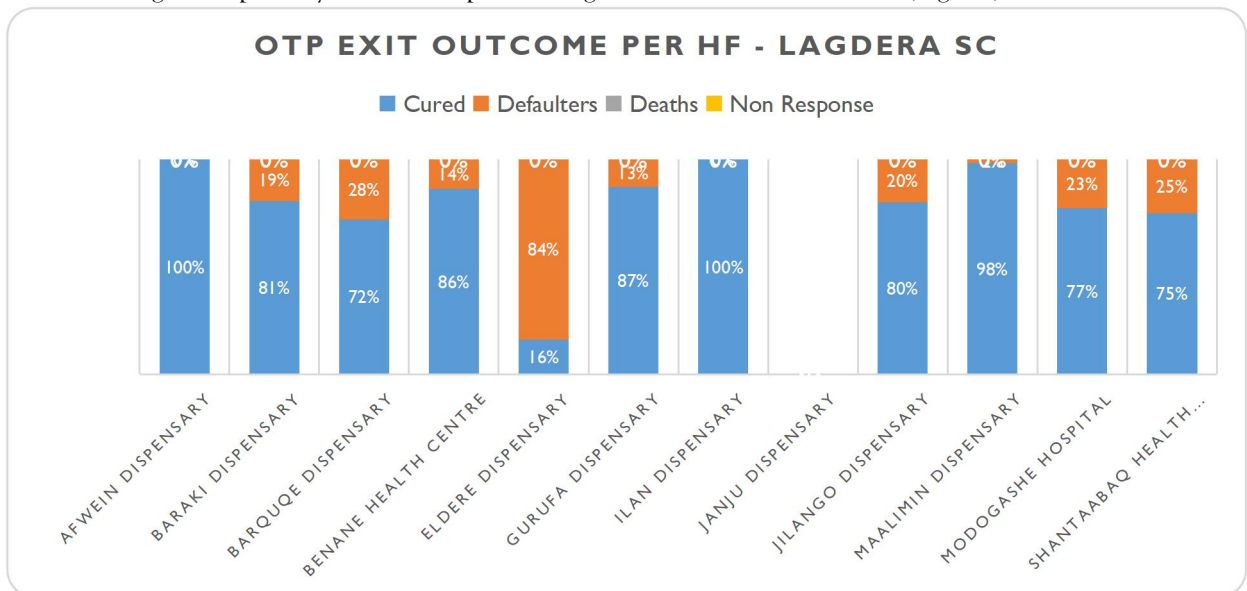


Figure 36: OTP Exit Outcome per H/F in Lagdera Sub County

### OTP Exit Outcomes: CURED

The proportion of cured cases against total cases admitted is high when compared with total cured cases at the county level, while this varies across the sub counties. (Fig. 37)

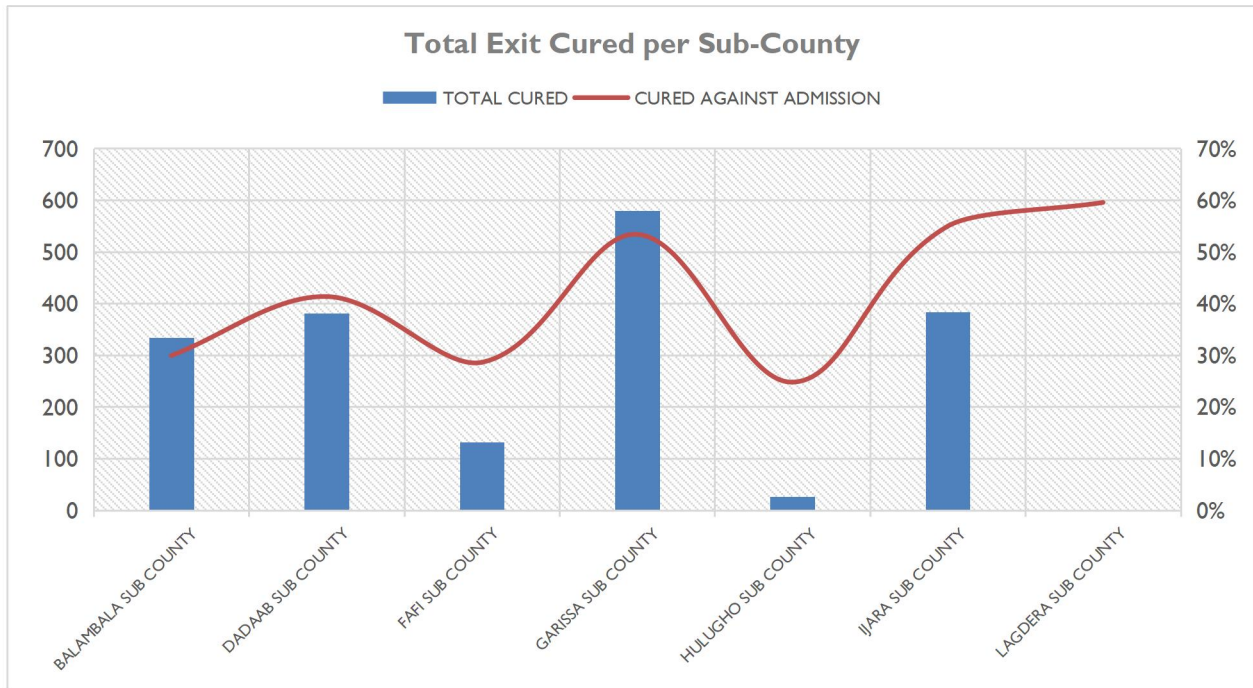


Figure 37: Total OTP Exit Cured against admissions per Sub County

Looking at Balambala SC; Mudey dispensary admitted the highest number of SAM cases compared to other facility. On proportion of SAM cases admitted, Jarajara dispensary performed better compared to the rest. (Fig. 38)

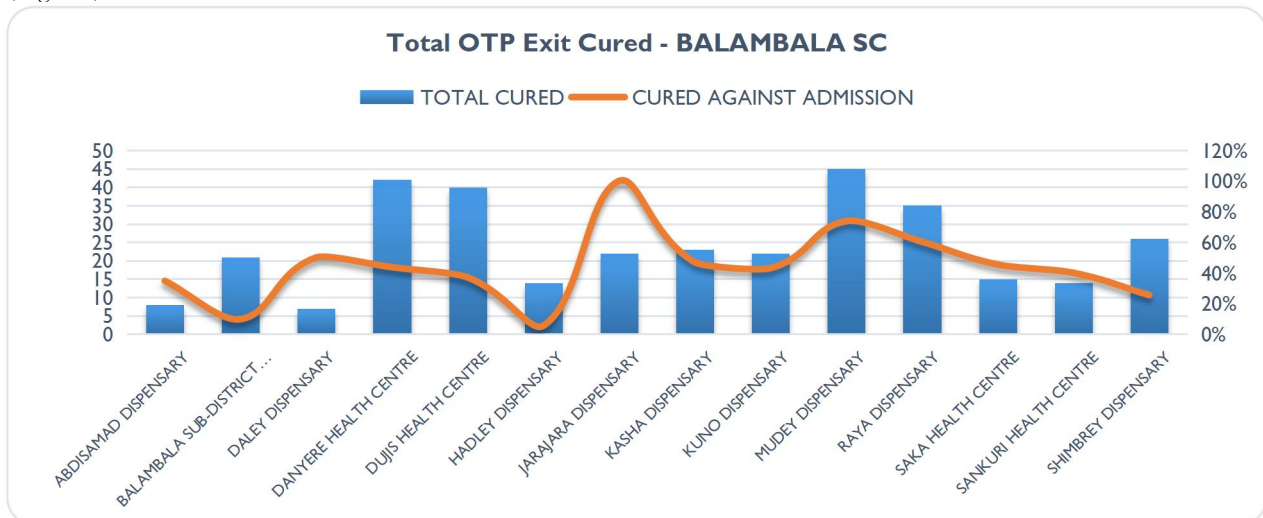


Figure 38: Total OTP Exit Cured against admissions in Balambala Sub County



Looking at Dadaab SC; Liboi HC admitted the highest number of SAM cases compared to other facility. On proportion of SAM cases admitted, Dadaab SCH and Liboi HC performed better compared to the rest. (Fig. 39)

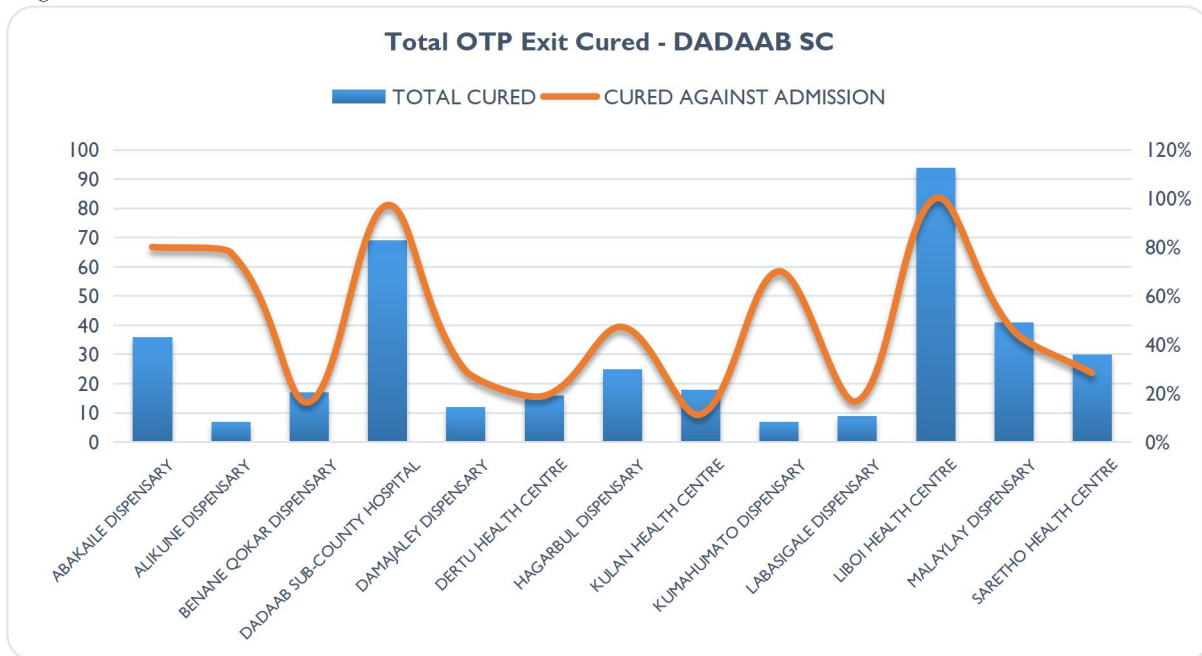


Figure 39: Total OTP Exit Cured against admissions in Dadaab Sub County

Looking at Fafi SC; Boreholefive dispensary admitted the highest number of SAM cases compared to other facility. On proportion of SAM cases admitted, Borehole five performed better compared to the rest. (Fig. 40)

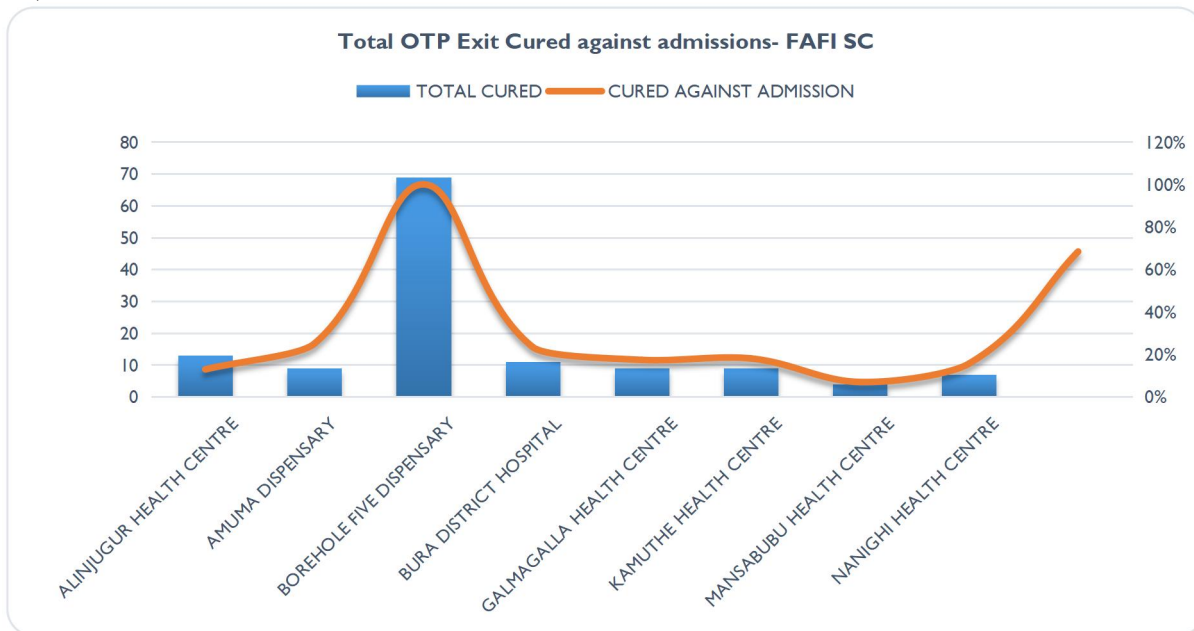


Figure 40: Total OTP Exit Cured against admissions in FAFI Sub County

Looking at Garissa SC; Medina HC admitted the highest number of SAM cases compared to other facility. On proportion of SAM cases admitted, Garissa CRH and Policeline dispensary performed better compared to the rest. (Fig. 41)

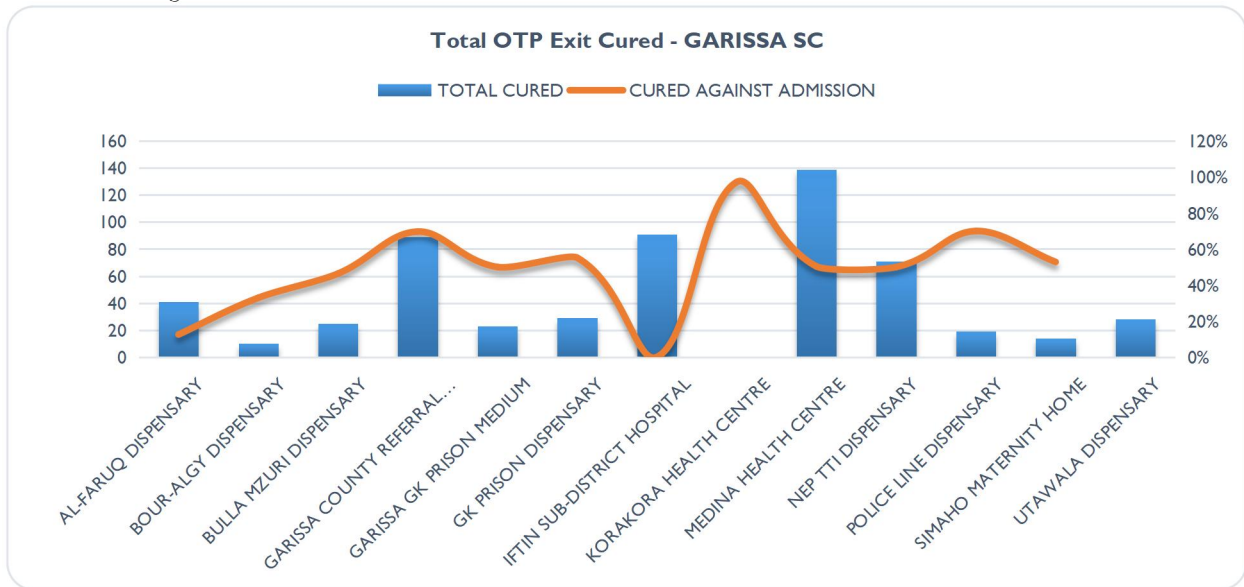


Figure 41: Total OTP Exit Cured against admissions in Garissa Sub County

Looking at Hulugho SC; Bultohama dispensary admitted the highest number of SAM cases compared to other facility. On proportion of SAM cases admitted, Bultohama dispensary performed better compared to the rest. (Fig. 42)

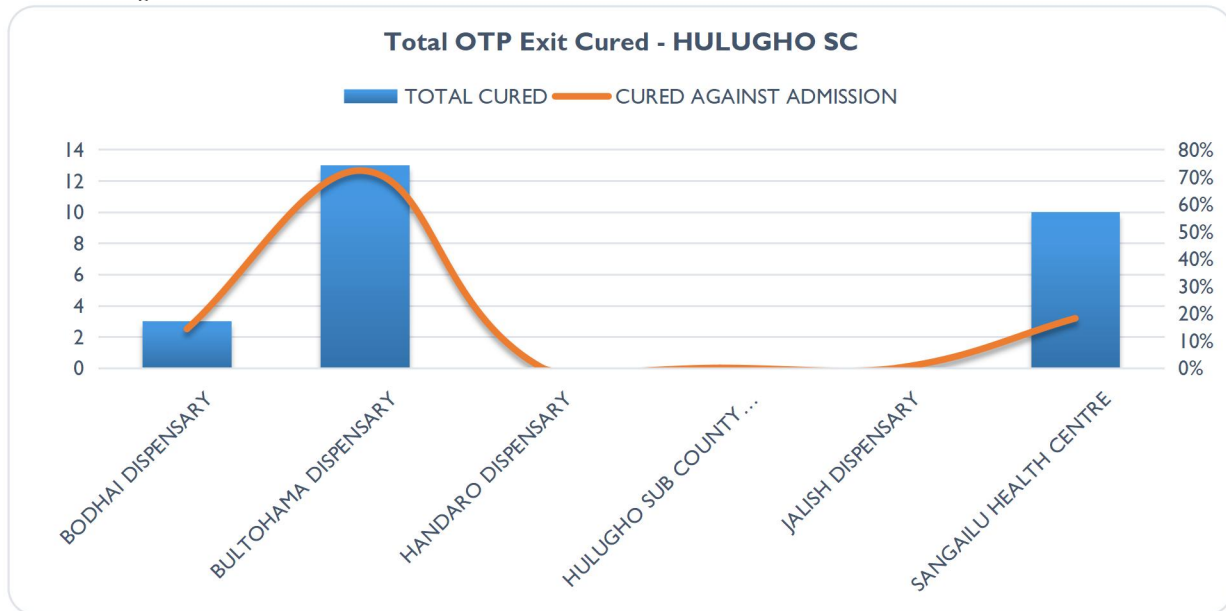


Figure 42: Total OTP Exit Cured against admissions in Hulugho Sub County



Looking at Ijara SC; Furqan dispensary admitted the highest number of SAM cases compared to other facility. On proportion of SAM cases admitted, Korisa dispensary performed better compared to the rest. (Fig. 43)

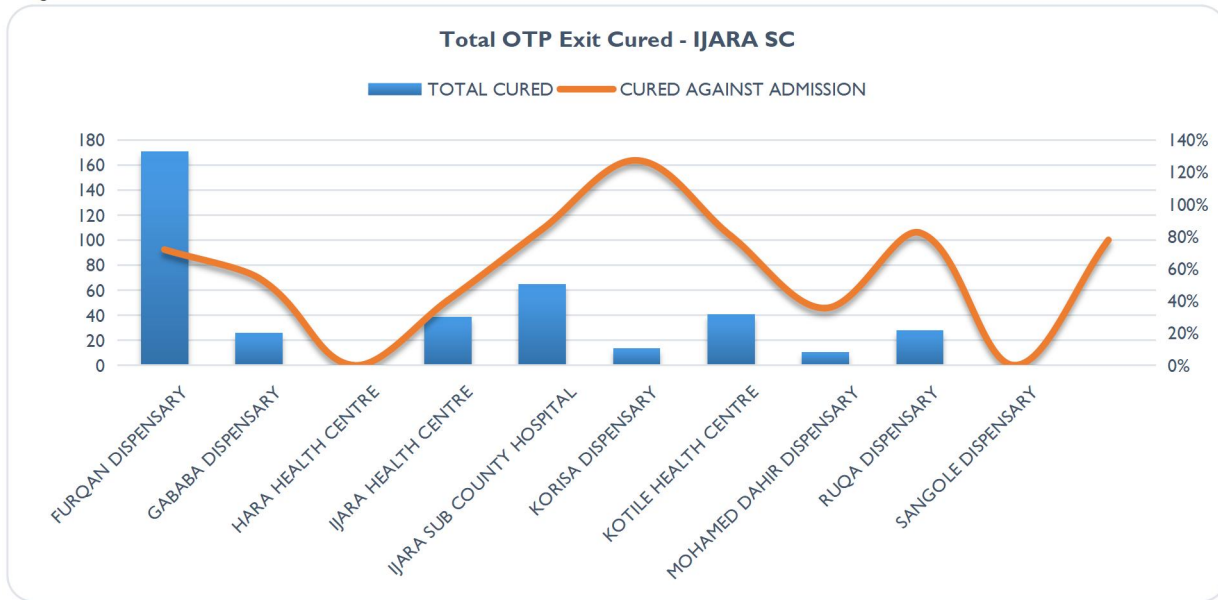


Figure 43: Total OTP Exit Cured against admissions in Ijara Sub County

Looking at Modogashe Hospital; Furqan dispensary admitted the highest number of SAM cases compared to other facility. On proportion of SAM cases admitted, Maalimin dispensary performed better compared to the rest. (Fig. 43)

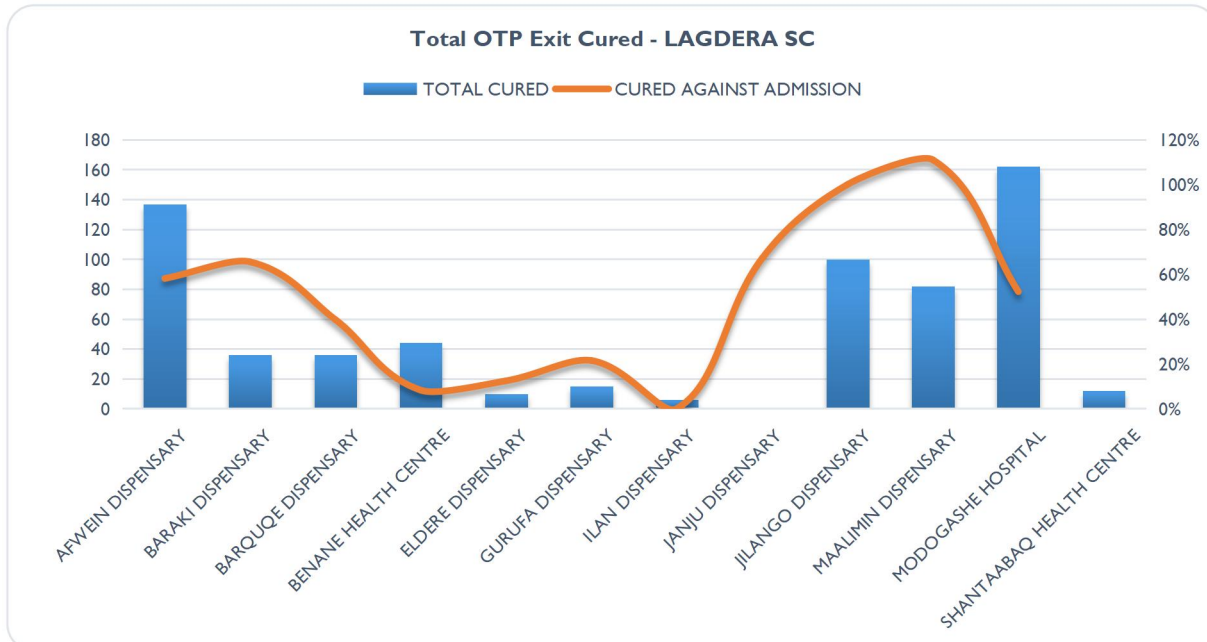


Figure 44: Total OTP Exit Cured against admissions in Lagdera Sub County



### WHZ score at Discharge Cured from OTP

OTP program in Garissa observed the treatment protocol and the appropriate discharge criteria, where most cases discharged as cured from OTP were beyond  $-3SD$ , with the Median WHZ score at discharge cured being  $< -1 SD$  to  $\geq -2 SD$  (median value = 835). A few cases of early discharge when the clients are still SAM by WHZ score, observed more in Dadaab, Garissa and Lagdera, indicating case mismanagement, attributed to mix up of admission and discharge criteria.

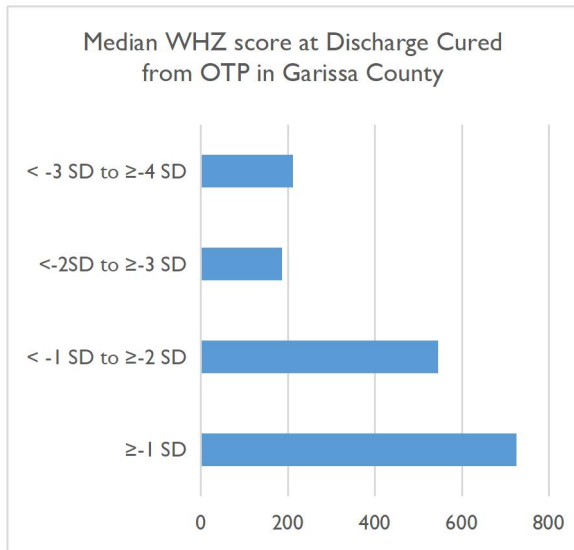


Figure 45: Median WHZ score at Discharge Cured from OTP in Garissa County

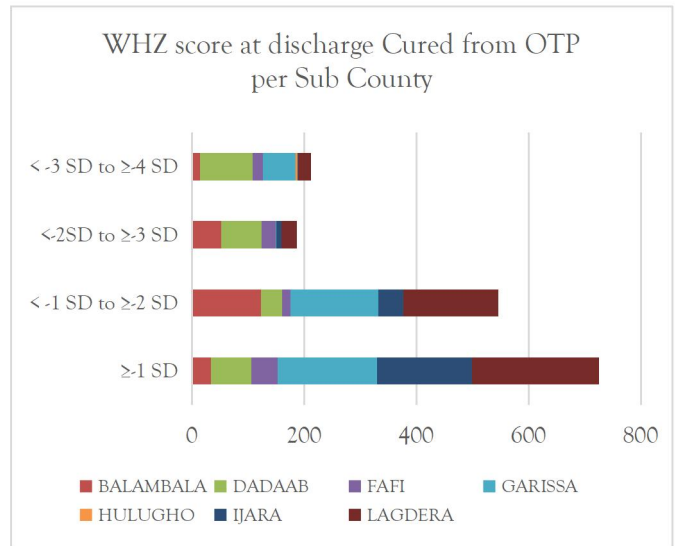


Figure 46: WHZ score at discharge Cured from OTP per Sub County

### MUAC at Discharge Cured from OTP

Garissa County OTP observed the appropriate discharge criteria by MUAC, with the Median MUAC at discharge cured being 12.2cm (Median value=402.5), when cases are past SAM. However, a big number of cases were discharged immediately upon reaching the discharge criteria, and were likely to become relapses since they were not being transferred to SFP.

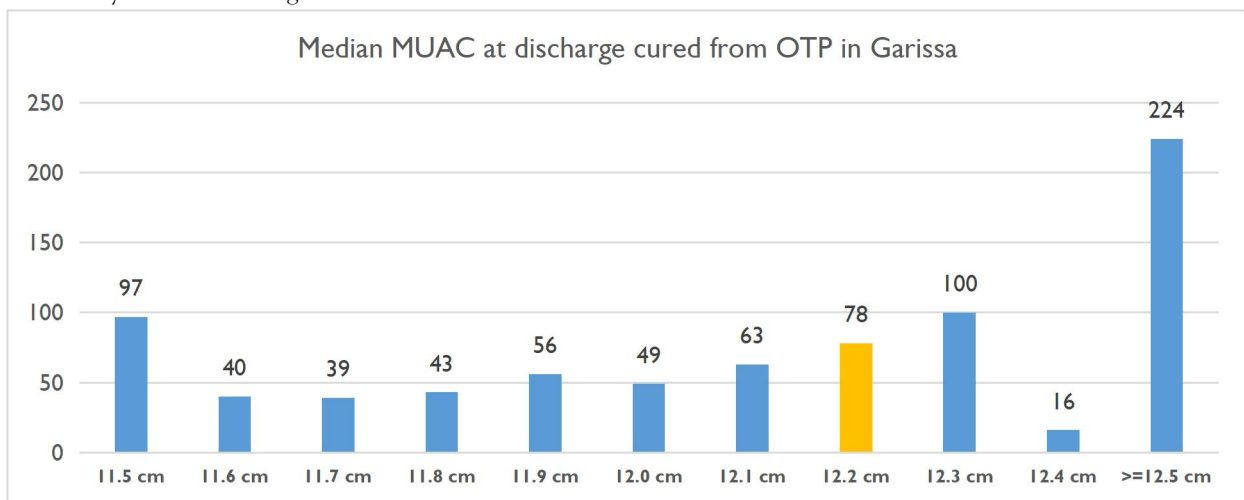


Figure 47: Median MUAC at discharge cured from OTP in Garissa

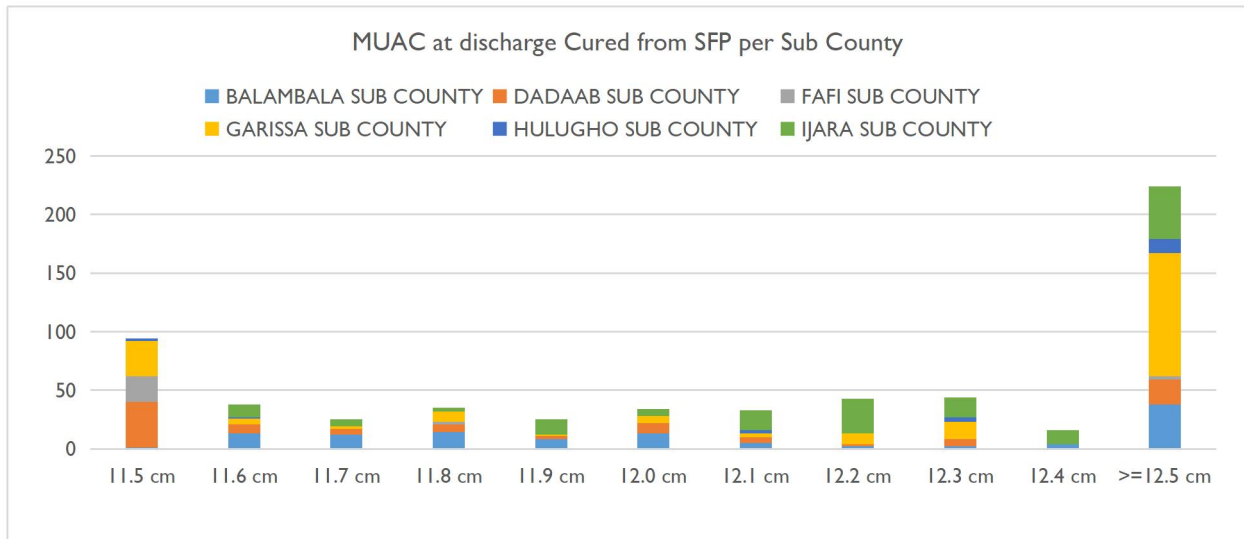


Figure 48: MUAC at discharge Cured from SFP per Sub County

### Length of Stay in Weeks at Discharge Cured from OTP

The Median LOS at discharge cured is 8 weeks coinciding with the recommended LOS before discharge cured from OTP. However, very early (4 weeks) was also observed indicating very short LOS. On the other hand, very late (>10 weeks) discharge as cured was also observed, across the sub counties with some beneficiaries staying in the program as long as 15 weeks. This is a poor program performance, which can create a negative picture about, due to fatigue of the caregivers for overstaying in the program.

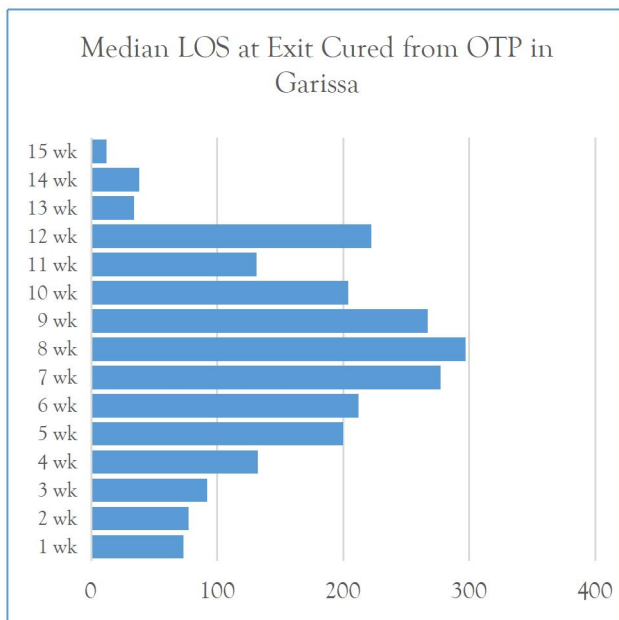


Figure 49: Median LOS at Exit Cured from OTP in Garissa

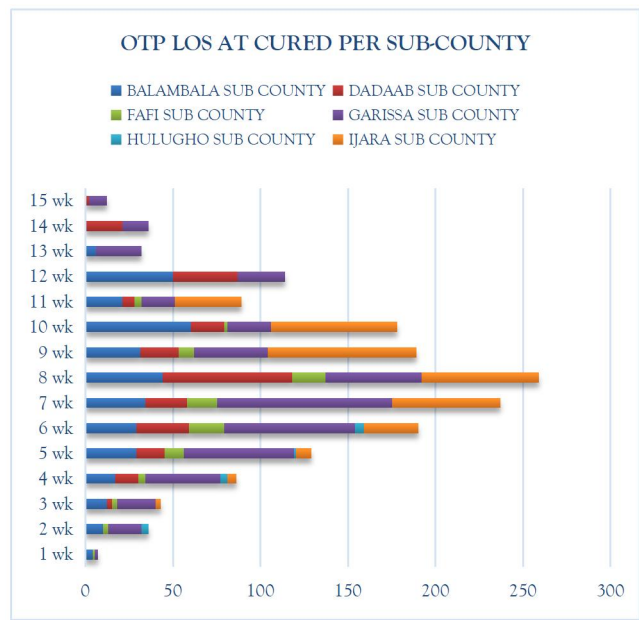


Figure 50: LOS at Exit Cured from OTP per Sub County in Garissa

## OTP Exit Outcome: DEFAULTING

Defaulters are children who were enrolled into the programme, but have missed three consecutive visits. High defaulting rates are an indication of poor program coverage. IMAM program indicators should show a consistently low rate of defaulters. Program defaulter rates might vary over time, this might be due to deterioration in the security situation, leading to reduced access and availability of services, impacts of climatic conditions e.g. droughts, floods etc. that affect how populations can access services or patterns of labour demand. Defaulting in Garissa County is high affecting IMAM program performance negatively, with defaulter rates surpassing the SPHERE threshold of below 15%, across all the sub counties. High proportion of defaulters observed against the total admissions, affecting all the Sub Counties except Garissa Sub County.

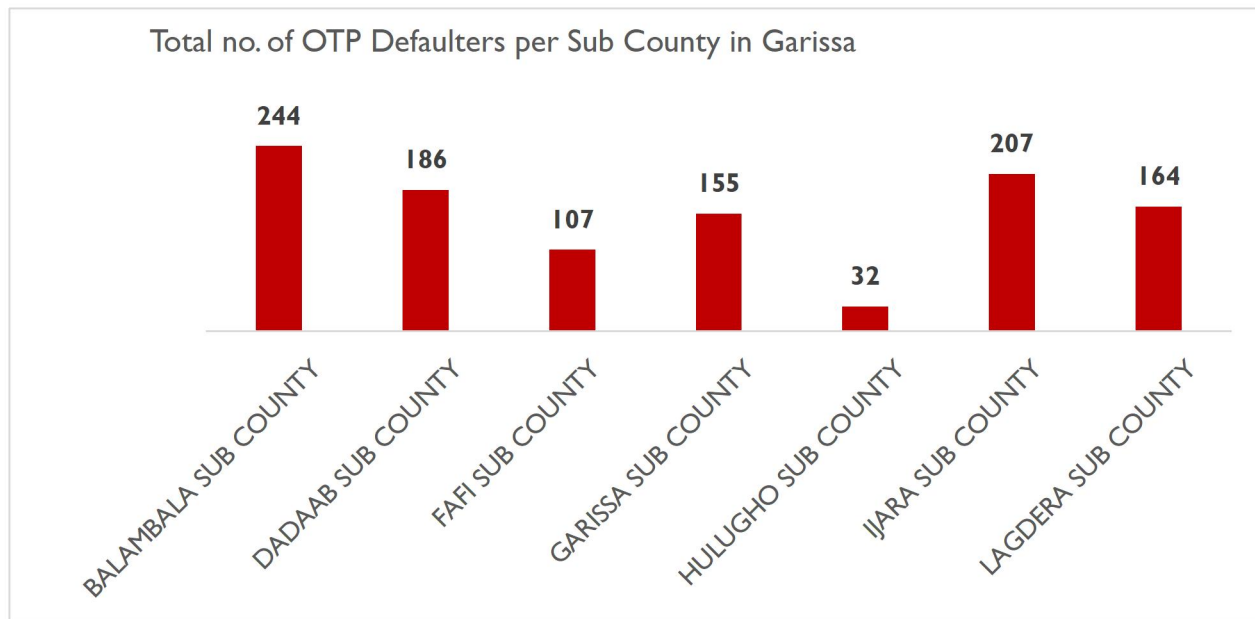


Figure 51: OTP Defaulters per Sub County in Garissa

### OTP Defaulting against Admissions

When OTP admissions were further analyzed, it was observed that a high threshold of the admitted cases defaulted before discharge, with defaulting surpassing the SPHERE threshold of below 15% in all the sub counties except Garissa Sub County; Lagdera (15%), Ijara (30%), Hulugho (31%), Garissa (13%), Fafi (24%), Dadaab (15%), Balambala (33%).

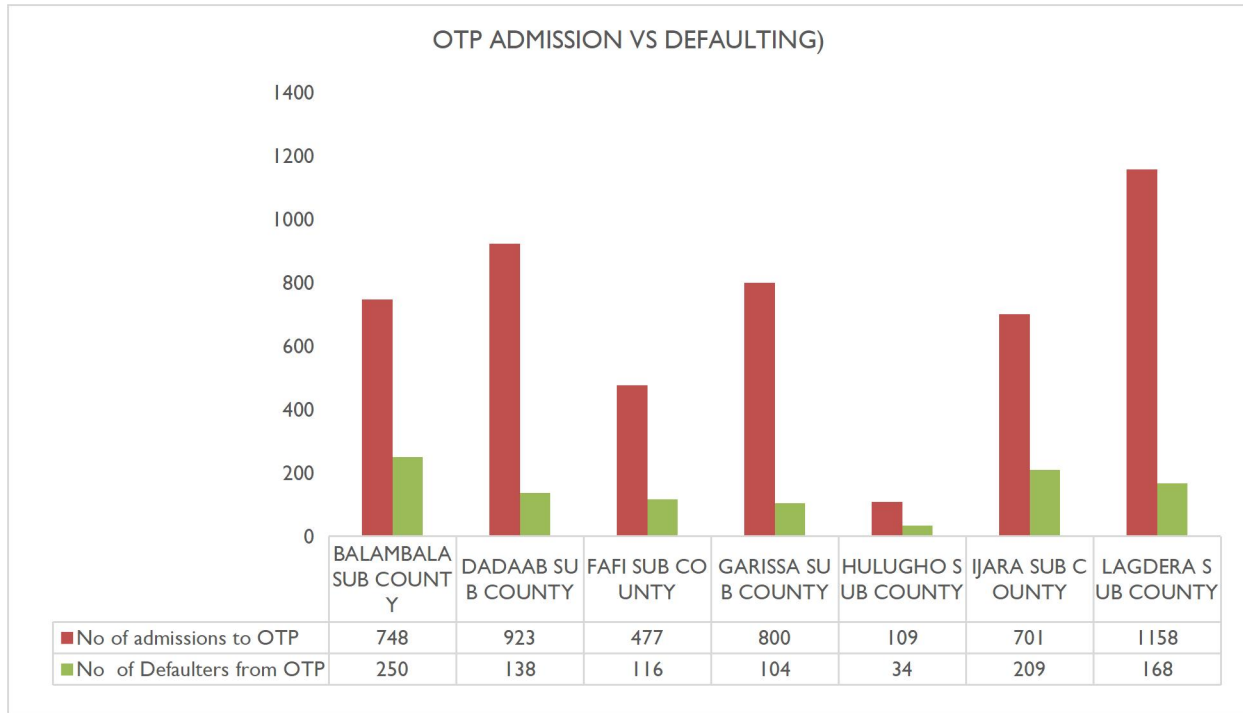


Figure 52: Defaulters against OTP admissions

Looking at defaulters in Balambala SC; Shimbrey dispensary registered highest number of defaulters of SAM case as well as the largest proportion of defaulters against OTP admissions compared to other facilities in the same sub-county . (Fig. 53)

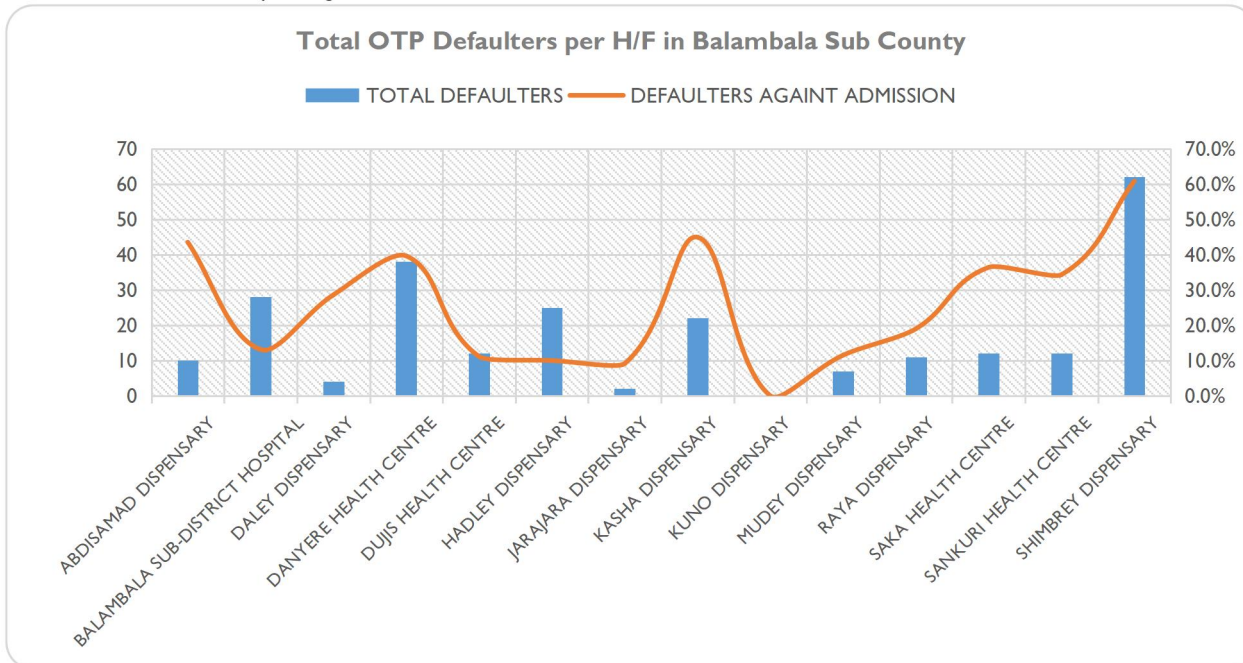


Figure 53: Total OTP Defaulters per H/F in Balambala Sub County

Looking at defaulters in Dadaab SC; Kulan HC registered highest number of defaulters of SAM case as well as the largest proportion of defaulters against OTP admissions compared to other facilities in the same sub-county . (Fig. 54)

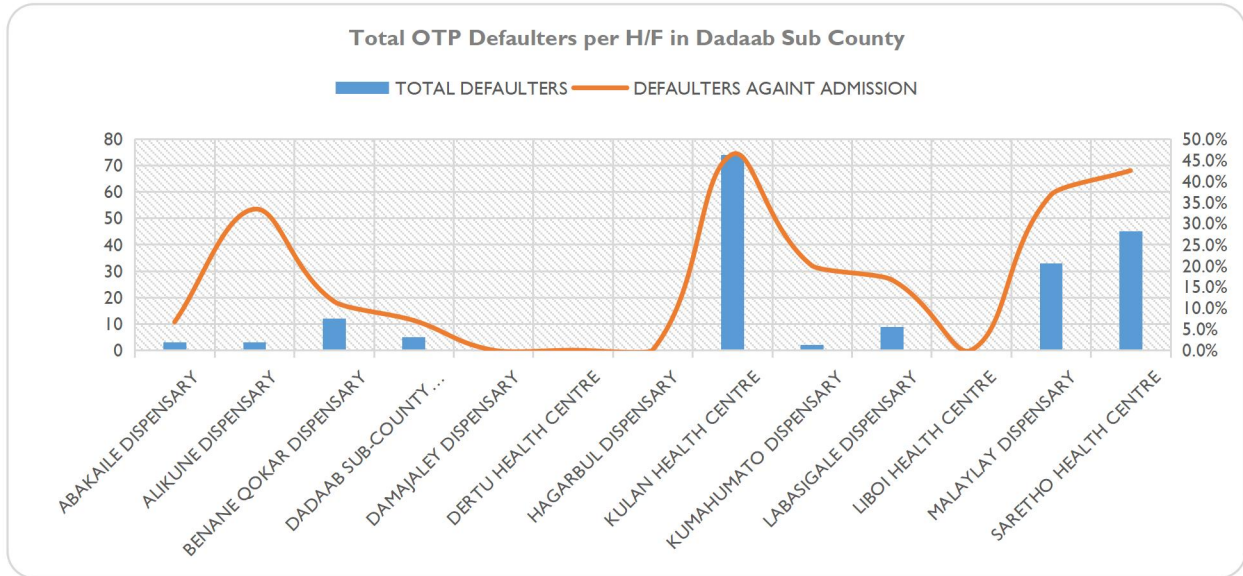


Figure 54: Total OTP Defaulters per H/F in Dadaab Sub County

Looking at defaulters in Fafi SC; Alinjgur HC registered highest number of defaulters of SAM case, while Galmach HC registered the largest proportion of defaulters against OTP admissions compared to other facilities in the same sub-county . (Fig. 55)

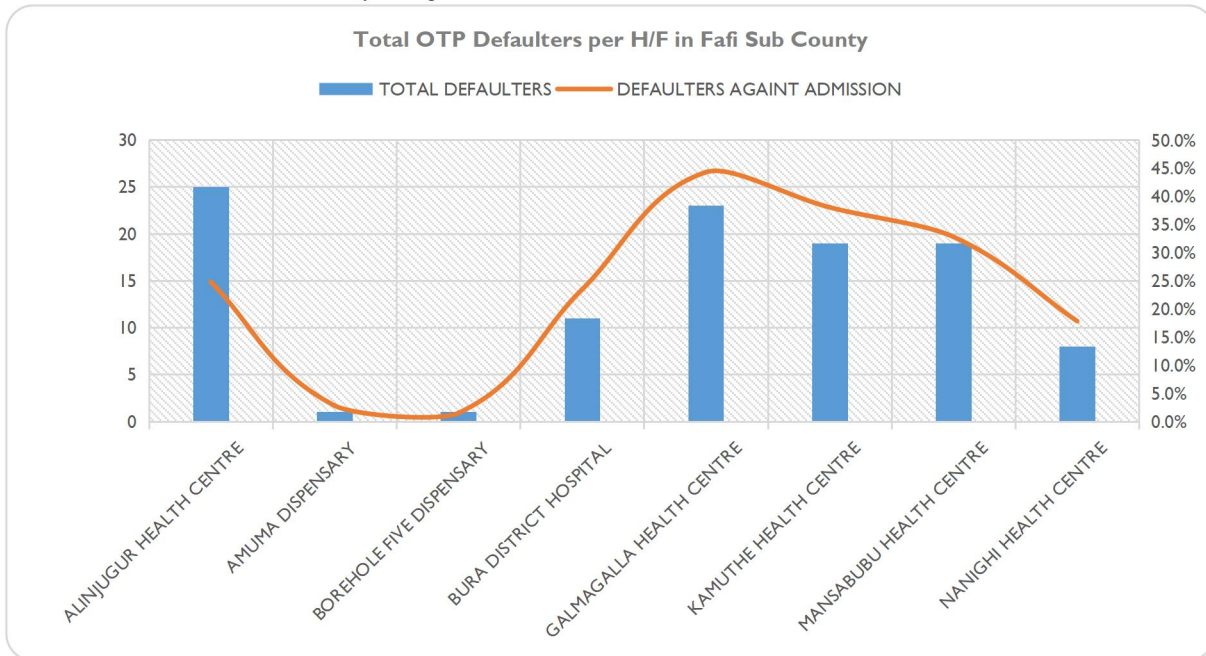


Figure 55: Total OTP Defaulters per H/F in Fafi Sub County



Looking at defaulters in Garissa SC; Iftin SCH registered highest number of defaulters of SAM case, while Korakora HC registered the largest proportion of defaulters against OTP admissions compared to other facilities in the same sub-county . (Fig. 56)

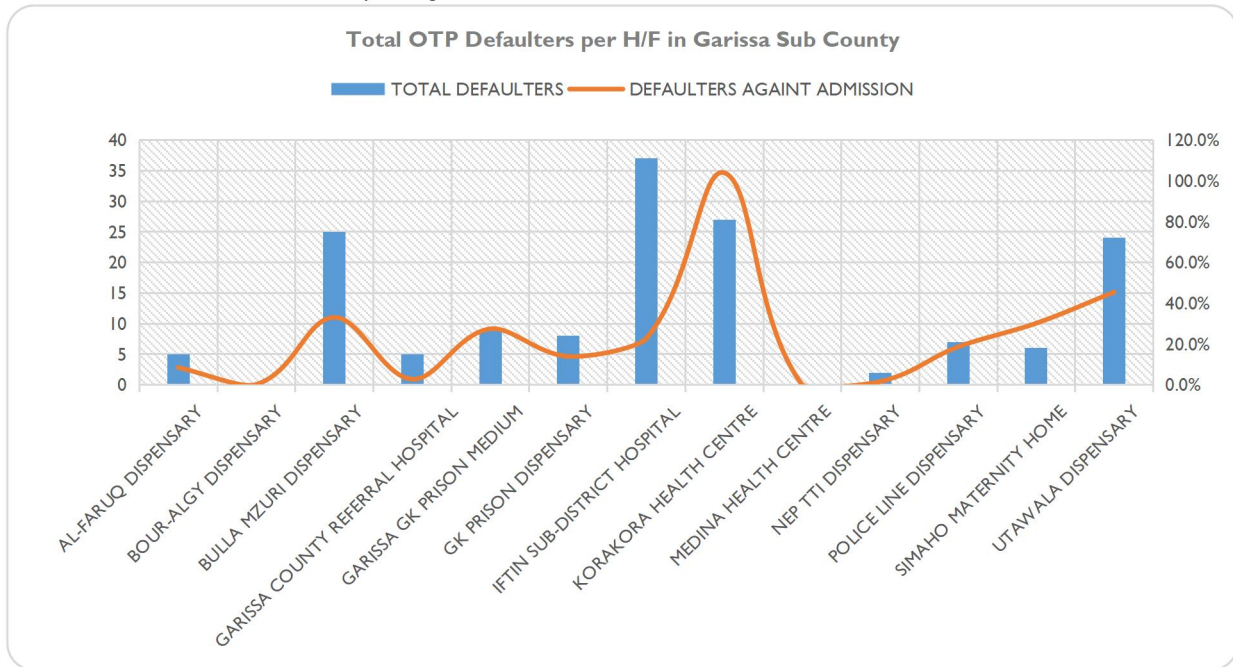


Figure 56: Total OTP Defaulters per H/F in Garissa Sub County

Looking at defaulters in Hulugho SC; Sangailu HC registered highest number of defaulters of SAM case, while Handaro dispensary and Hulugho SCH registered the largest proportion of defaulters against OTP admissions compared to other facilities in the same sub-county . (Fig. 57)

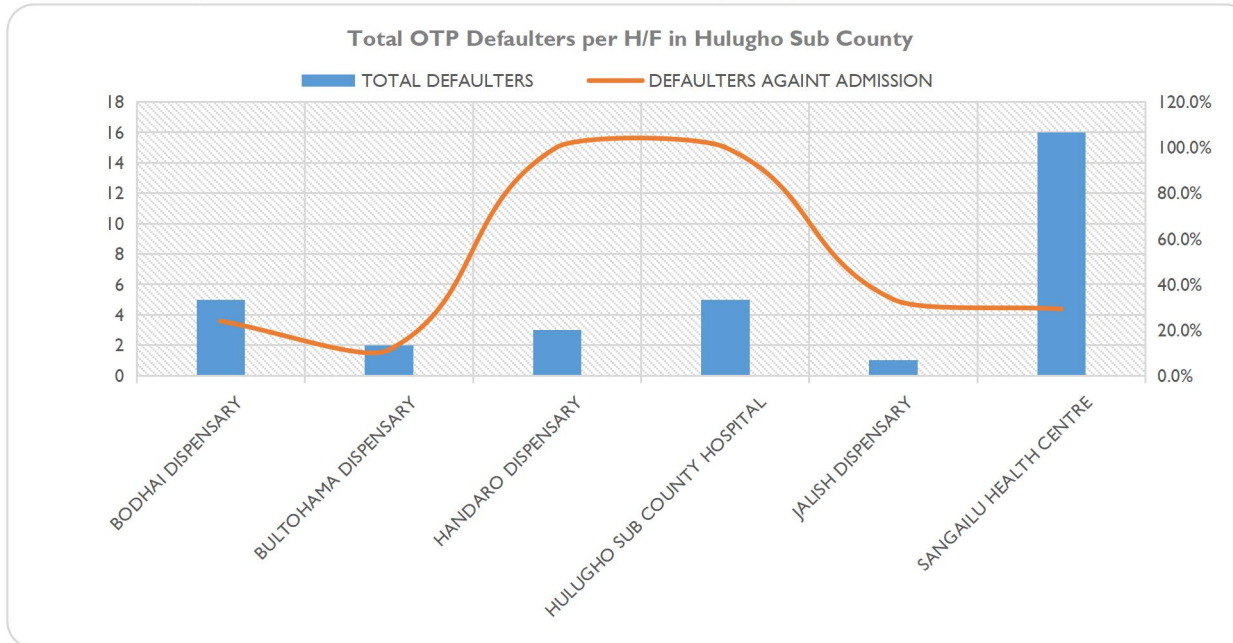


Figure 57: Total OTP Defaulters per H/F in Hulugho Sub County

Looking at defaulters in Ijara SC; Hara HC registered highest number of defaulters of SAM case as well as registered the largest proportion of defaulters against OTP admissions compared to other facilities in the same sub-county . (Fig. 58)

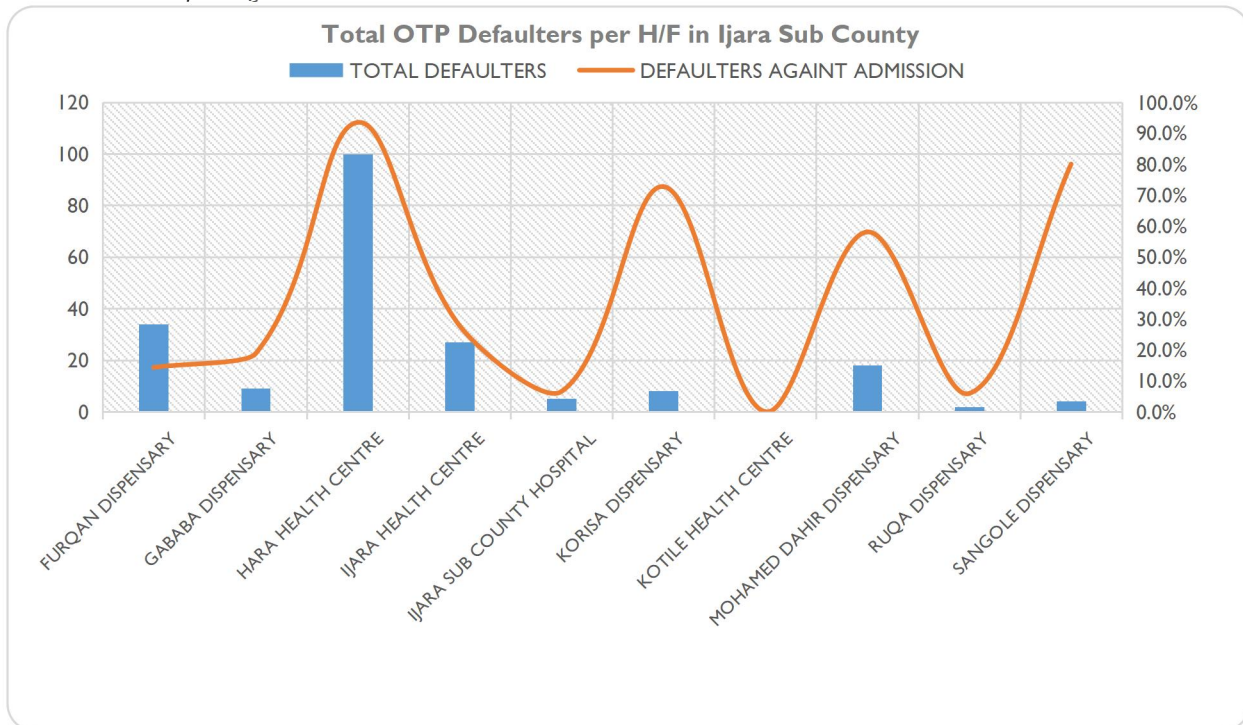


Figure 58: Total OTP Defaulters per H/F in Ijara Sub County

Looking at defaulters in Lagdera SC; Jilango dispensary registered highest number of defaulters of SAM case, while Barquqe dispensary registered the largest proportion of defaulters against OTP admissions compared to other facilities in the same sub-county . (Fig. 59)

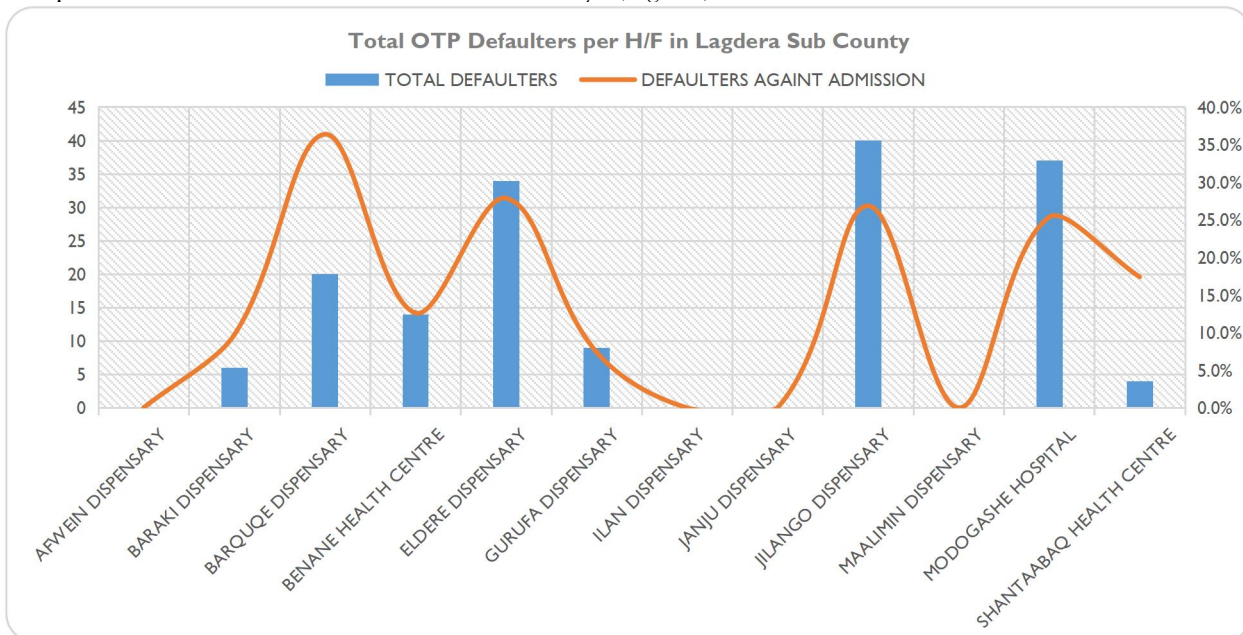


Figure 59: Total OTP Defaulters per H/F in Lagdera Sub County

### MUAC at Default from OTP

Median MUAC at default was 11.4cm (median value 206.5); indicating very early defaulting while cases are still SAM by MUAC, a poor adherence to SAM treatment protocol. Most cases of very early defaulting were observed in Dadaab Sub County. Quite a number of cases defaulted when already cured before being granted *proof-of-cure*; most cases observed in Balambala, Garissa and Ijara Sub Counties.

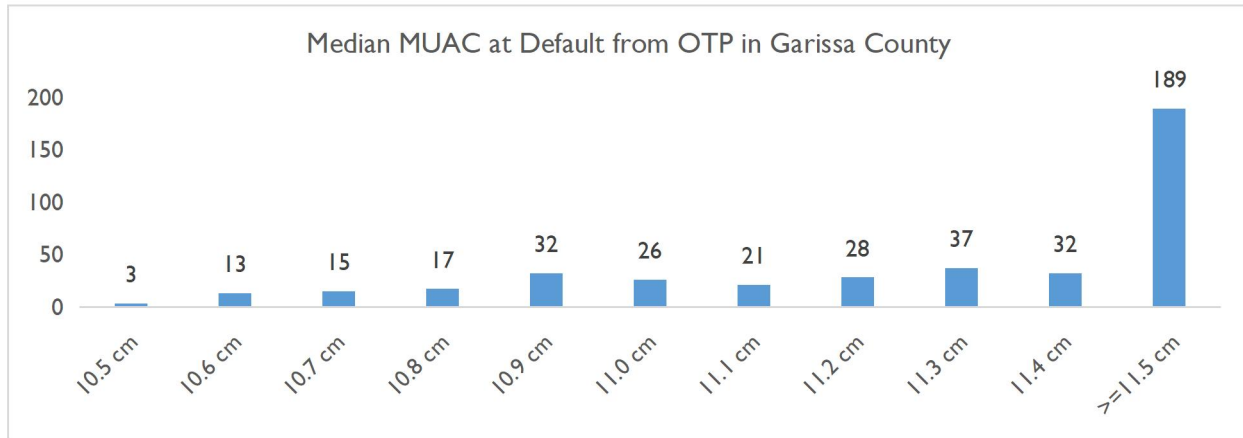


Figure 60: Median MUAC at Default from OTP in Garissa County

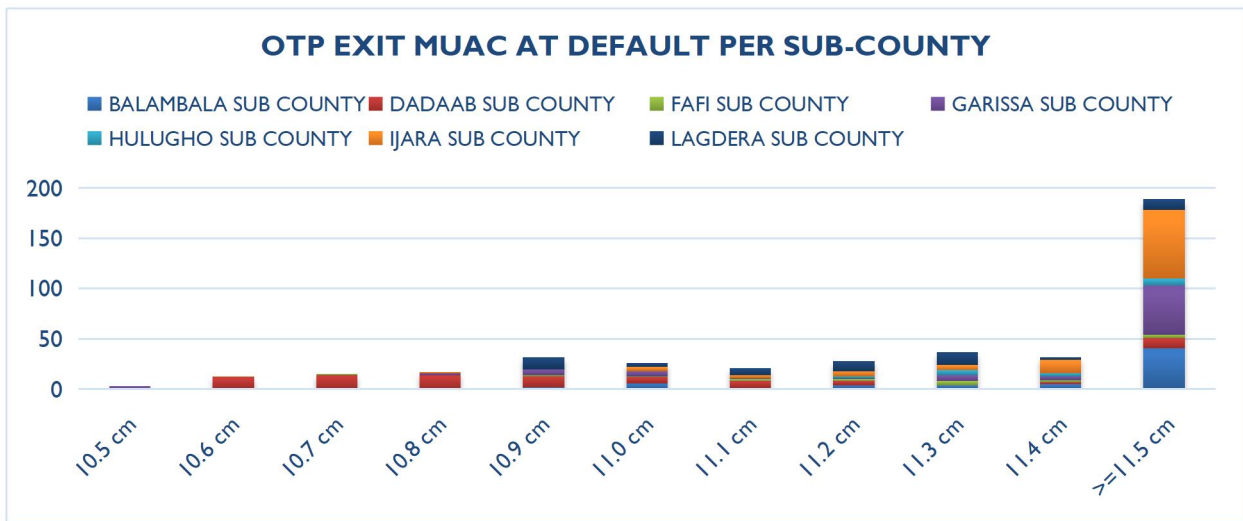


Figure 61: MUAC at Default from OTP per Sub County

### WHZ score at Default from OTP

The Median WHZ score at default was  $< -3$  SD to  $\geq 4$  SD (median value = 341); early defaulting while cases are still SAM by WHZ score; observed across the sub counties. This median WHZ score at discharge defaulted from OTP, is an indication of poor adherence to treatment protocol. Some cases exited as defaulters from OTP with a WHZ score of  $\geq 3$ SD, when already cured but with no *proof-of-cure*, across the sub counties.

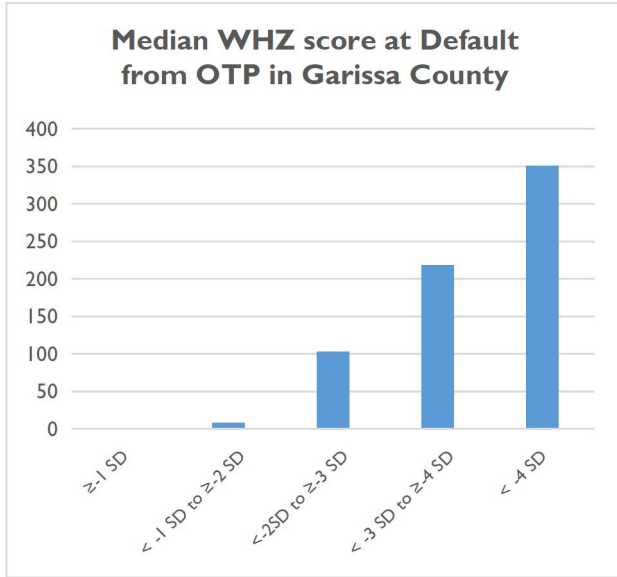


Figure 62: Median WHZ score at Default from OTP in Garissa County

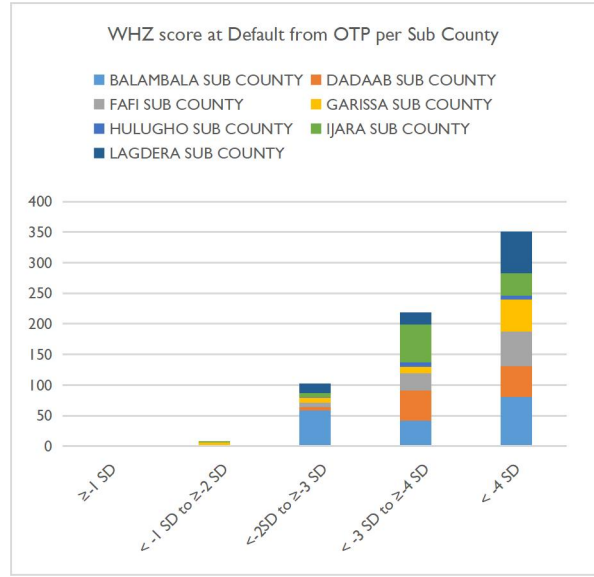


Figure 63: WHZ score at Default from OTP per Sub County

### Length of Stay at Default from OTP

The median LOS before discharge from OTP program as defaulter was three (3) weeks for all admissions, indicating very early default. All the six (6) sub counties of Garissa have short LOS at default (1-4 weeks), with default within the first and second visits being high. Very few defaulting cases were recovering (between 5-8 weeks) or recovered cases (>8 weeks) having defaulted immediately before the final *proof-of-cure*.

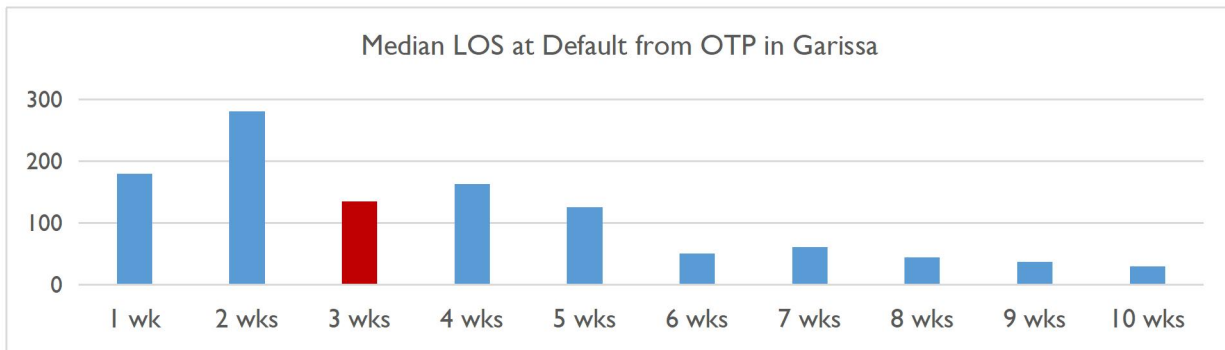


Figure 64: Median LOS at Default from OTP in Garissa

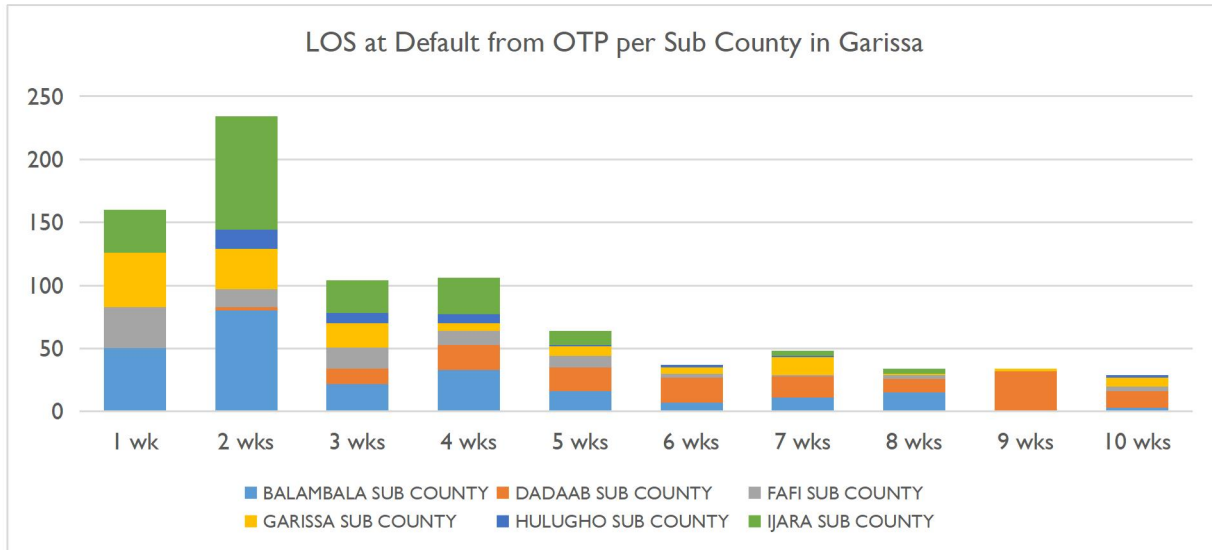


Figure 65: LOS at Default from OTP per Sub County

### Supplementary Feeding Program (SFP)

#### Referrals and return distance to the SFP site

The major referral mode into SFP in Garissa County is self-referral at 72%, followed by CHVs and Health facility referrals at 8% and 16% respectively. Self-referral is a good indication of appreciation of the MAM treatment program by caregivers, which in turn contributes to positive health seeking behavior. The major admission source into SFP program is direct (95.5%), with a few referrals from In-patient program. Upon analysis of the return distance, SFP caregivers indicated to have spent a return journey of 60-120 minutes when seeking for IMAM services. Garissa County utilizes all the three admission criteria into IMAM program as outlined in the IMAM guideline for Kenya. The predominant admission criteria into SFP in the county is WHZ score (75% of the total admissions assessed).

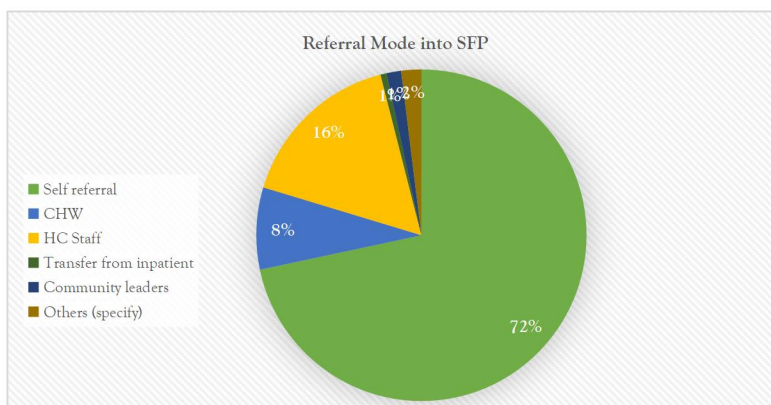


Figure 66: Common Referral Mode into SFP

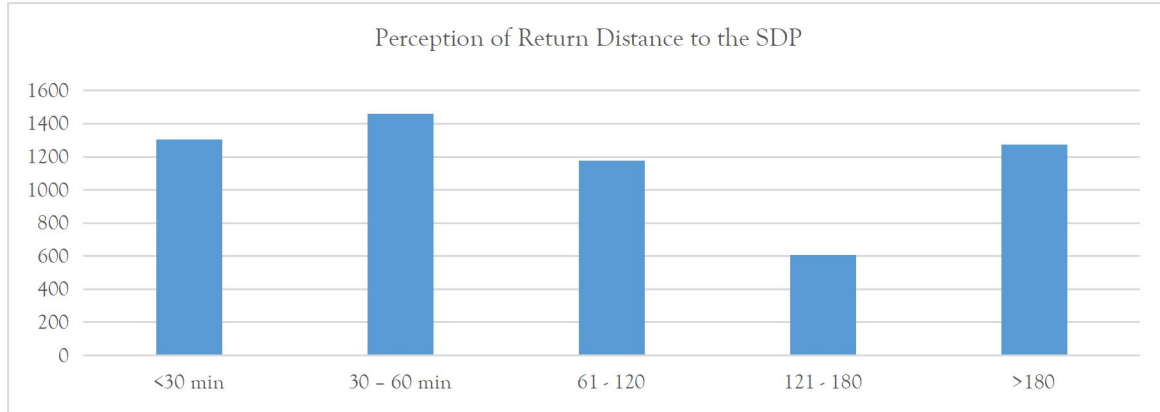


Figure 67: Perception of Return Distance to the SDP according to SFP caregivers

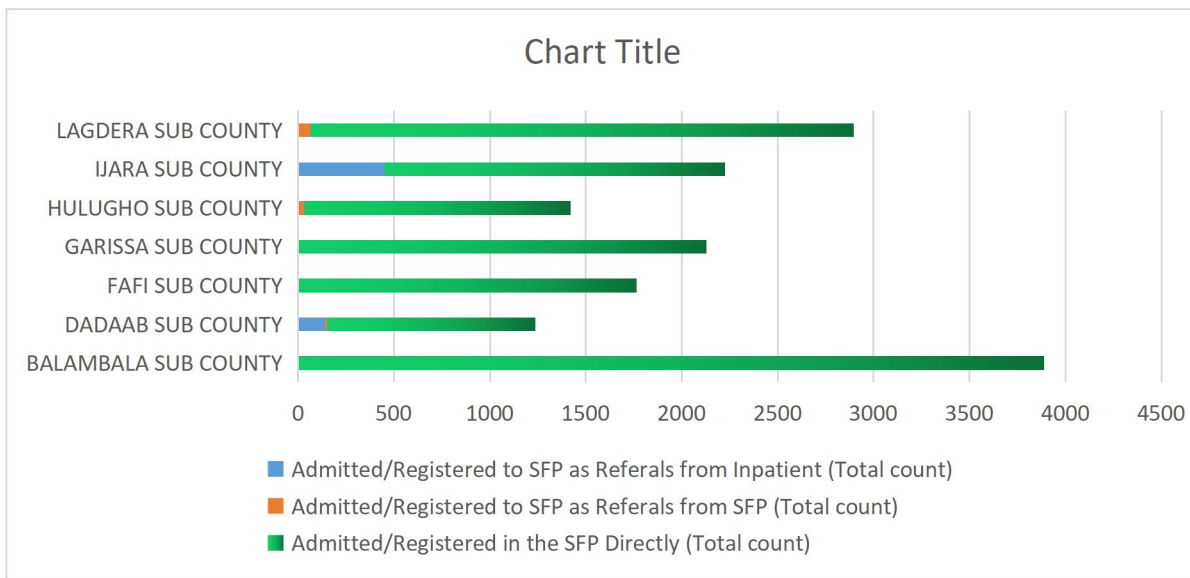


Figure 68: Source of cases for admission in SFP

### Trends in SFP Admissions

Generally, new cases were observed to increase in 2022 compared to the previous years, attributed to the prolonged drought season. During the analysis period (May 2022 to April 2023), increasing admissions over time were observed, with cases being on the increasing trend from September 2022 to April 2023. Peaks in MAM admissions observed in September 2022, December 2022 and March 2023 majorly attributed to heightened case finding through mass screening, family MUAC and outreach activities, which are part of the scaled up drought response activities.

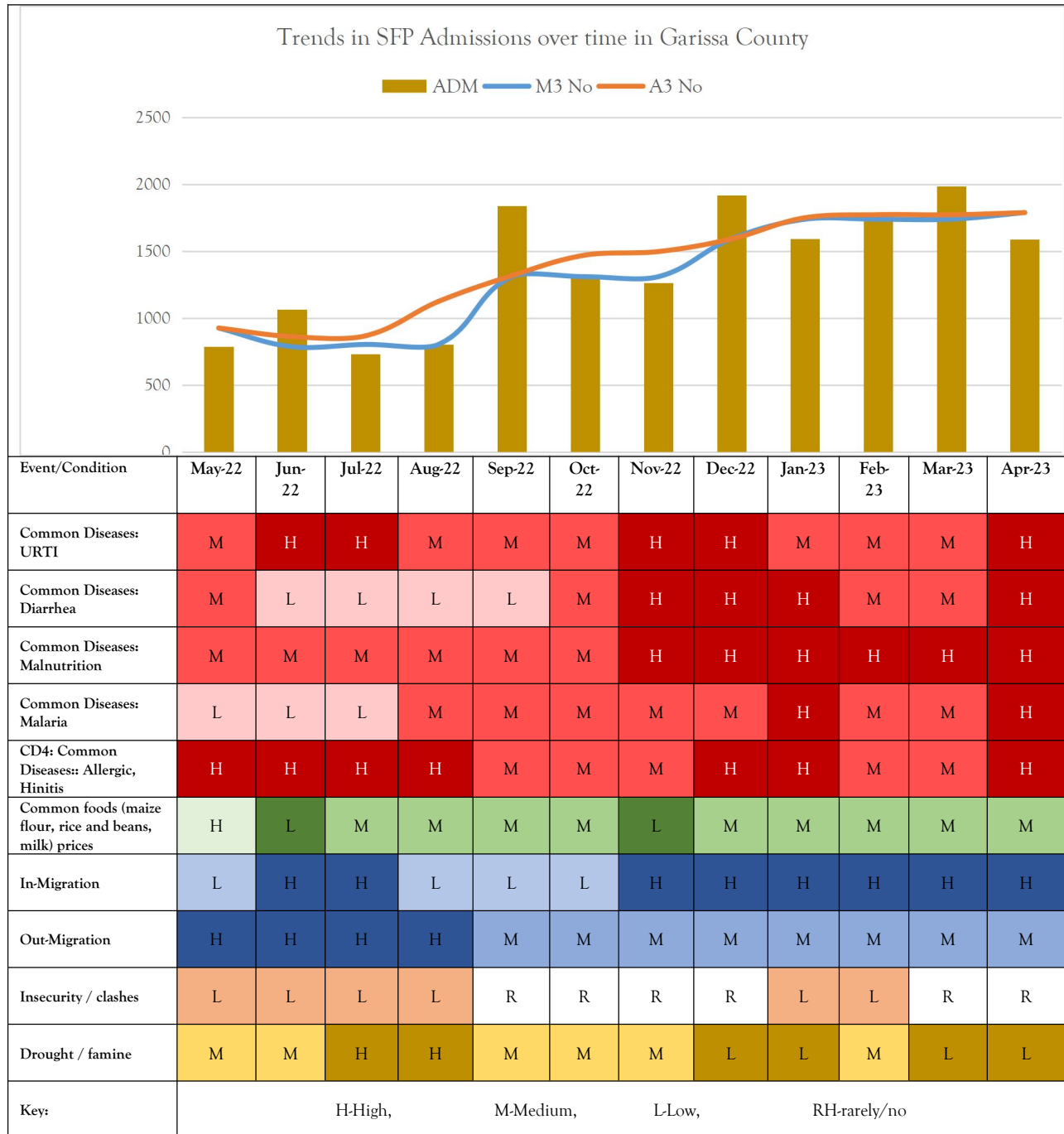


Figure 69: Trends in SFP Admissions over time for Garissa County

SFP admission trends per facility reveal which area add to county performance and area that pull down county performance. Performance in admission is subjective to number parameters that includes prevalence, catchment population (facility workload) and facility activeness. Some facility may have higher number of admission cases but when compared to expected caseload/U5 population performance is low.

Looking at Balambala SC; Danyere HC admitted most MAM cases, compared to total population of under 5 within the same facilities, the proportion of MAM cases admitted is high than 50% in Mudey dispensary, Kuno dispensary and Hadley dispensary. (Fig. 70)

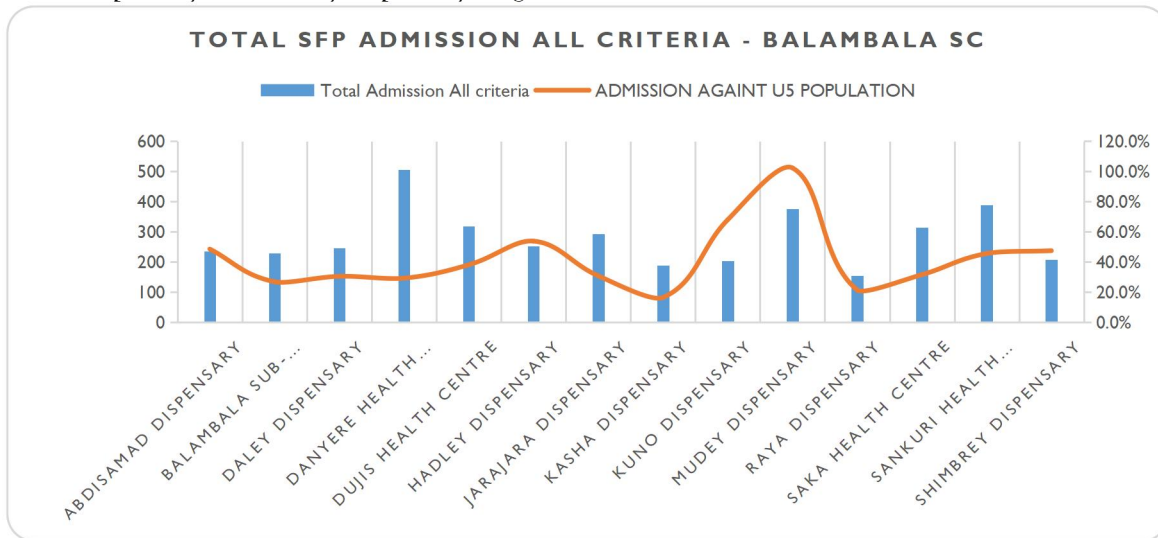


Figure 70: SFP Admissions against the population for under-fives in Balambala Sub County

Looking at Dadaab SC; Dertu HC admitted highest MAM cases, compared to total population of under 5 within the same facilities, the proportion of MAM cases admitted is quite low in all the facilities in the county, the highest is 15% in Abakaile dispensary and Alkune dispensary. (Fig. 71)

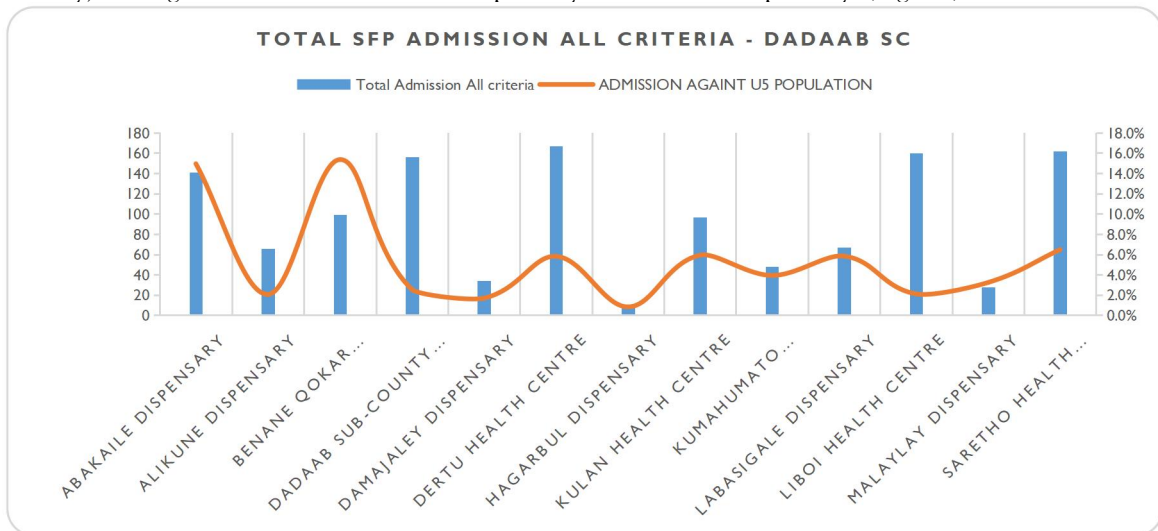


Figure 71: SFP Admissions against the population for under-fives in Dadaab Sub County



Looking at Fafi SC; Mansabubu HC admitted most MAM cases, compared to total population of under 5 within the same facilities, the proportion of MAM cases admitted is high than 25% in Nanighi HC. (Fig. 72)

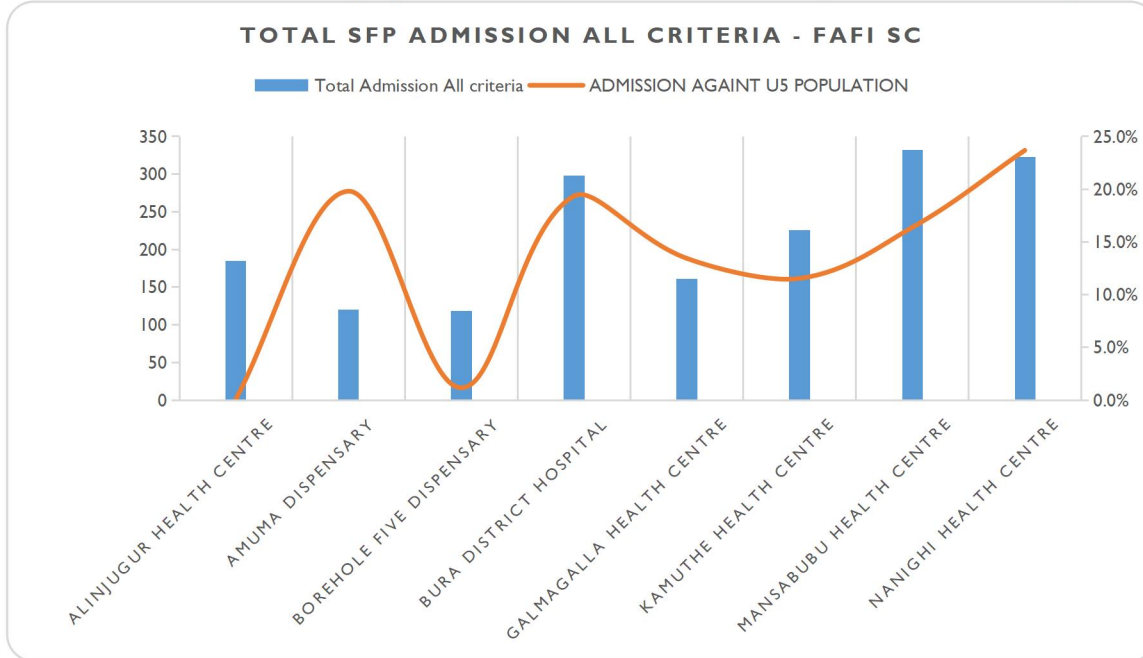


Figure 72: SFP Admissions against the population for underfives in Fafi Sub County

Looking at Garissa SC; Iftin SCH admitted most MAM cases, compared to total population of under 5yr within the same facilities, the proportion of MAM cases admitted is high than 35% in Garissa CRH. (Fig. 73)

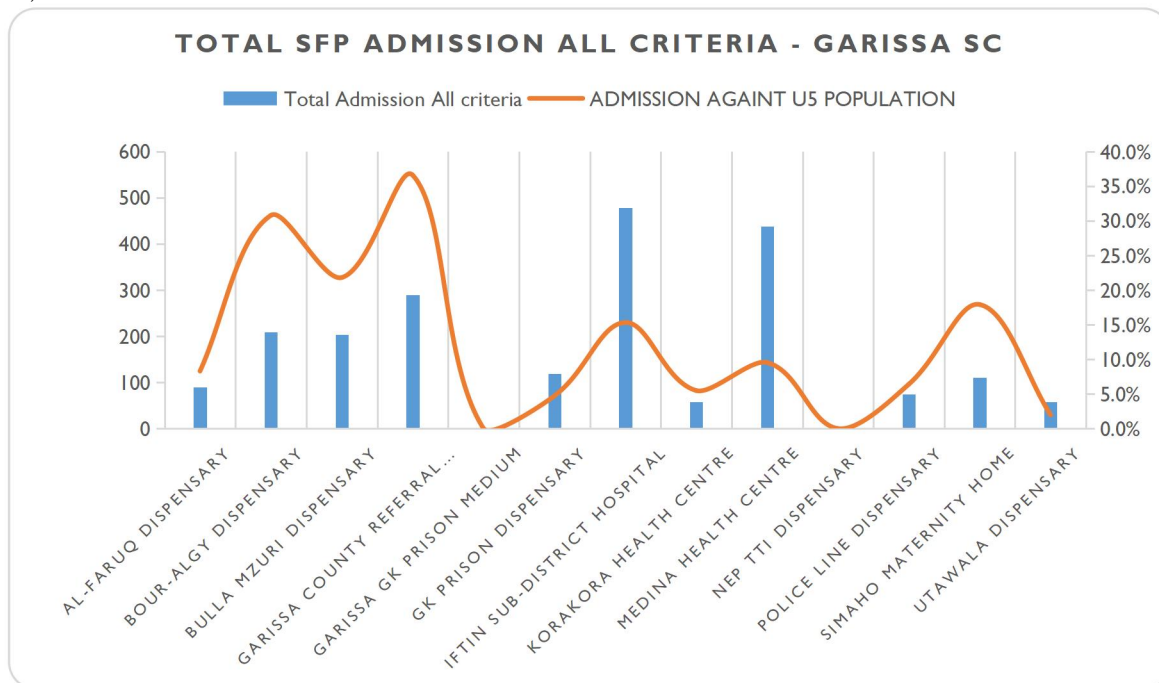


Figure 73: SFP Admissions against the population for underfives in Garissa Sub County

Looking at Hulugho SC; Sangailu HC admitted most MAM cases, compared to total population of under 5 within the same facilities, the proportion of MAM cases admitted is high than 30% in in the same facility - Sangailu HC. (Fig. 74)

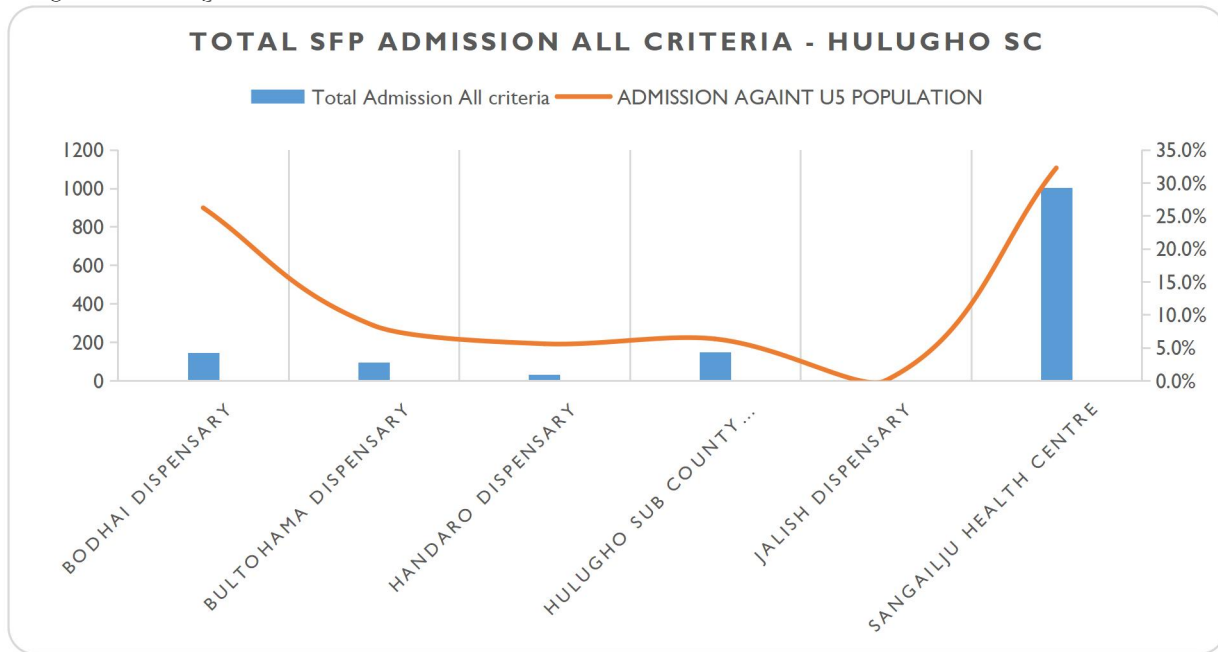


Figure 74: SFP Admissions against the population for underfives in Hulugho Sub County

Looking at Ijara SC; Ijara SCH admitted most MAM cases, compared to total population of under 5 within the same facilities, the proportion of MAM cases admitted is high than 40% in Furqan dispensary. (Fig. 70)

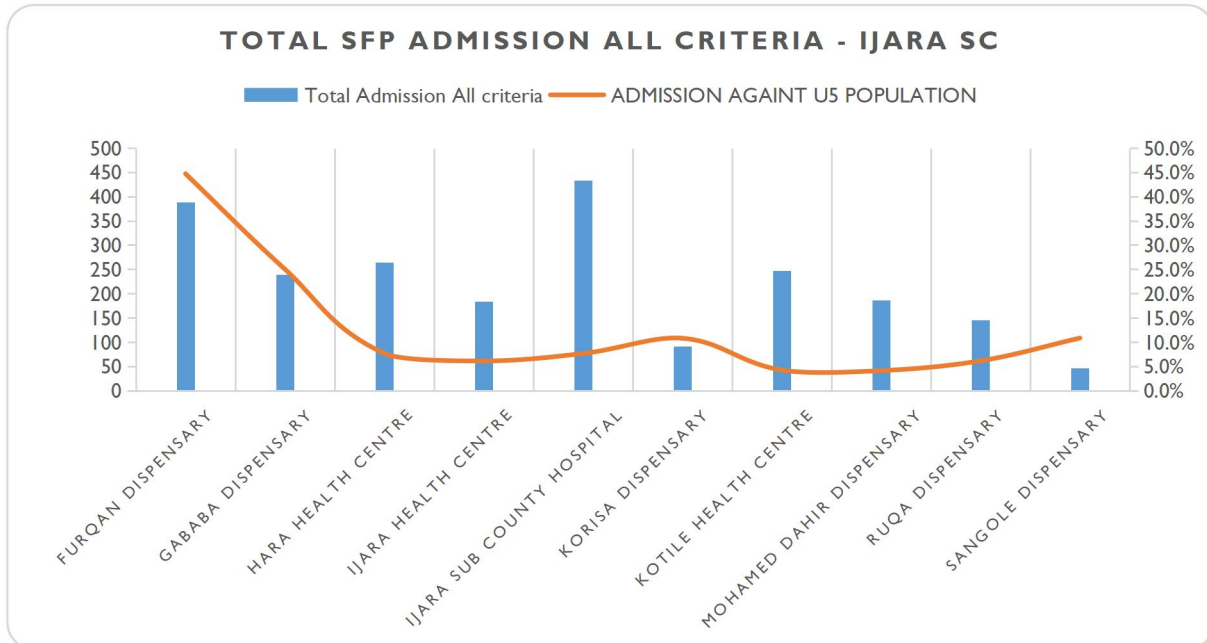


Figure 75: SFP Admissions against the population for underfives in Ijara Sub County

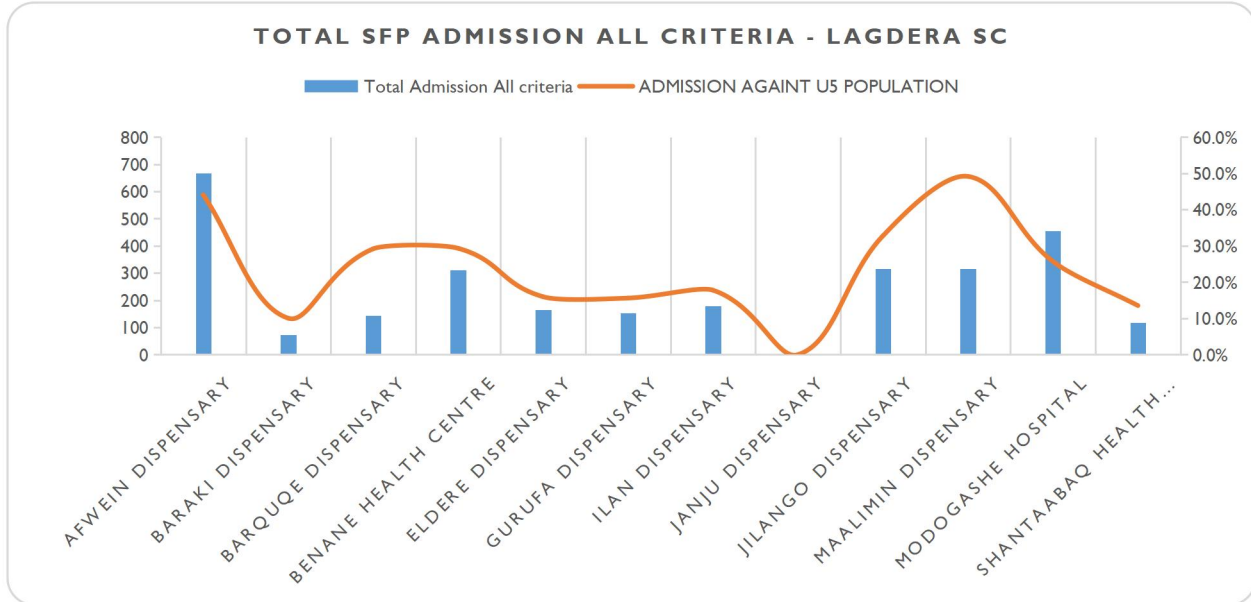


Figure 76: SFP Admissions against the population for under-fives in Lagdera Sub County

### MUAC at admission into SFP

The median MUAC at admission into SFP in Garissa is 12.2cm (median value is 1,976), indicating early admissions. However, late MUAC admissions into OTP observed, indicating poor health seeking behaviors, majorly in Lagdera, Dadaab and Garissa Sub Counties. Minimal cases of wrong admissions of above or equal to 11.5cm were attributed to a mix up of the admission criteria.

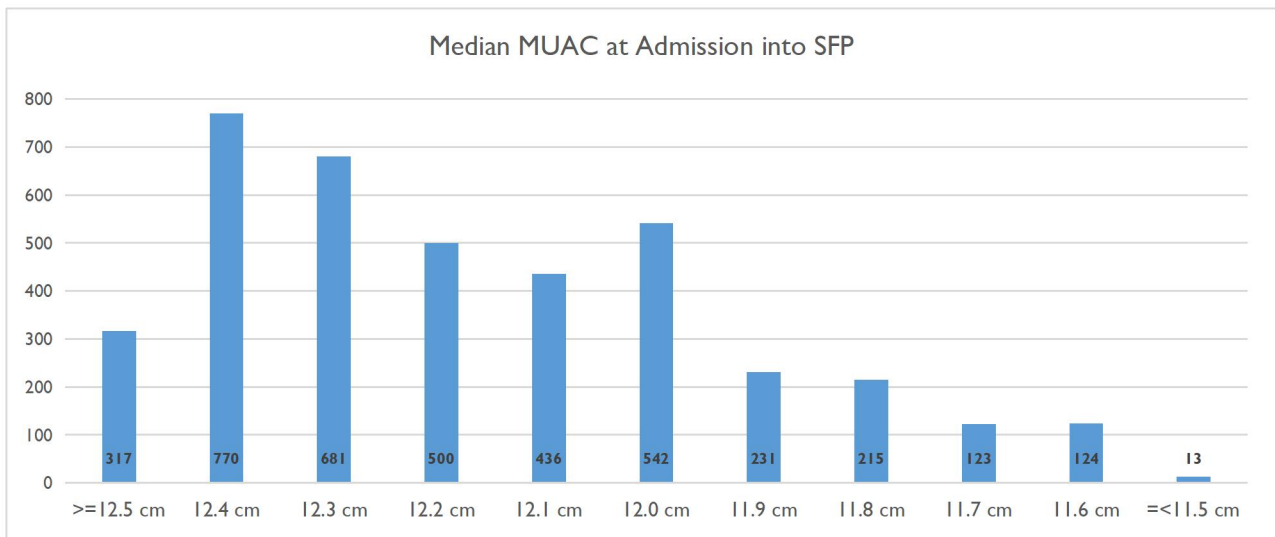


Figure 77: Median MUAC at Admission into SFP

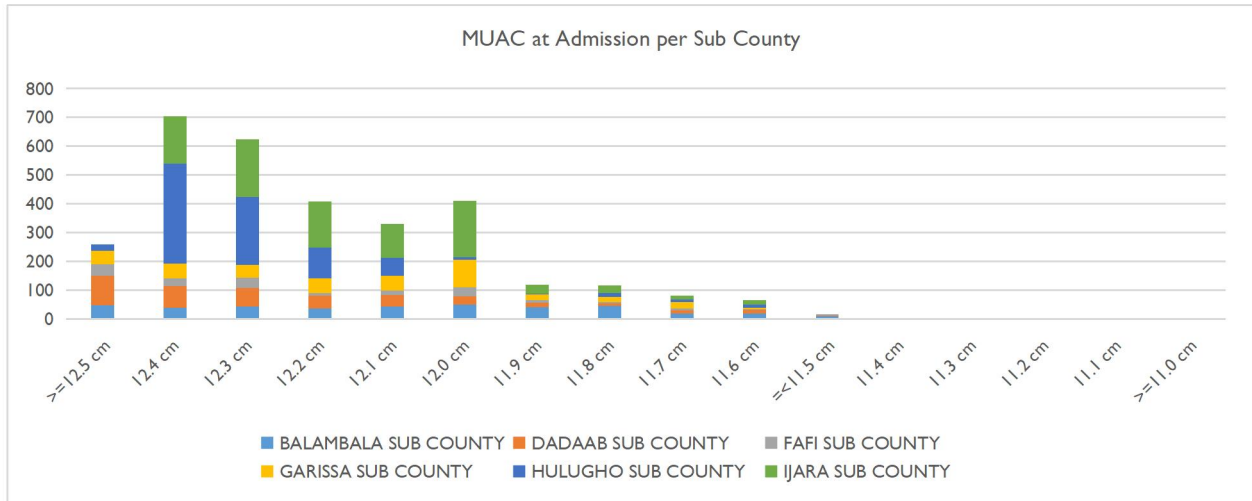


Figure 78: MUAC at Admission per Sub County

### WHZ score at admission into SFP

Most admissions were within the recommended admission thresholds for Moderate acute malnutrition ( $< -2$  SD to  $\geq -3$  SD) based on WHZ score, with median value being 5,804, observed across the sub counties indicating timely and correct admission criteria. Some late admissions of  $< -3$ SD observed in all the sub counties indicating poor health seeking behavior. Few wrong admissions when cases are not MAM by WHZ score observed due to mix up of the admission criteria, majorly in Balambala, Dadaab and Garissa Sub Counties.

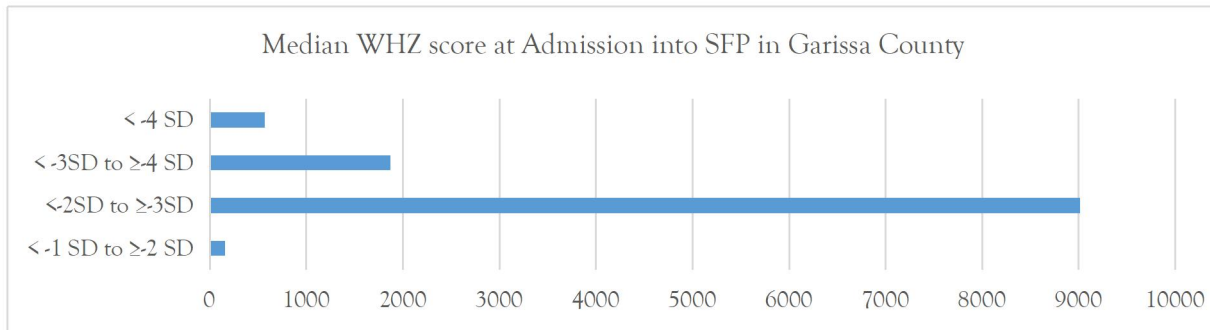
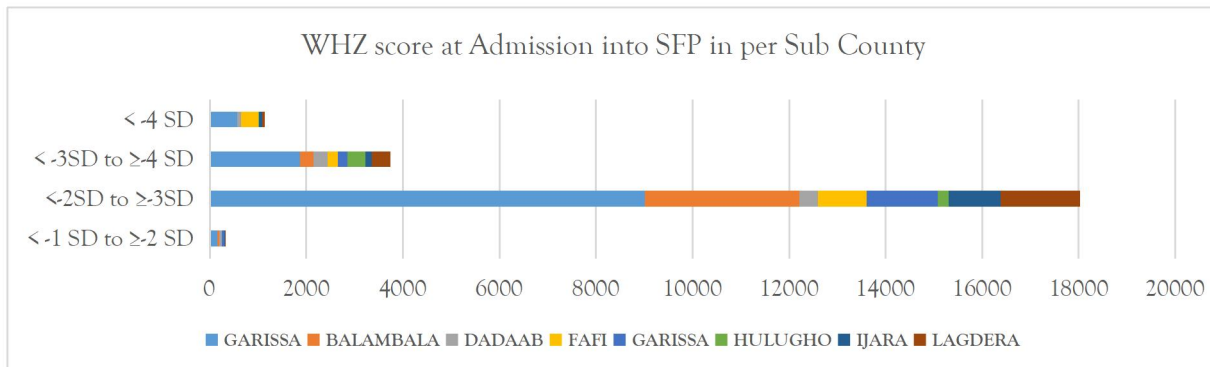


Figure 79: Median WHZ score at Admission into SFP in Garissa County



### SFP Exit Outcomes

Overly, Garissa County is performing poorly against the SPHERE thresholds for SFP program, with high defaulter rates being observed throughout the 12-month review period, with an exception in July and August 2022. All the sub counties affected by the high defaulter rates except Garissa Sub County. High default rates were attributed to migration and maternal workload, with little follow up of health services by caregivers.

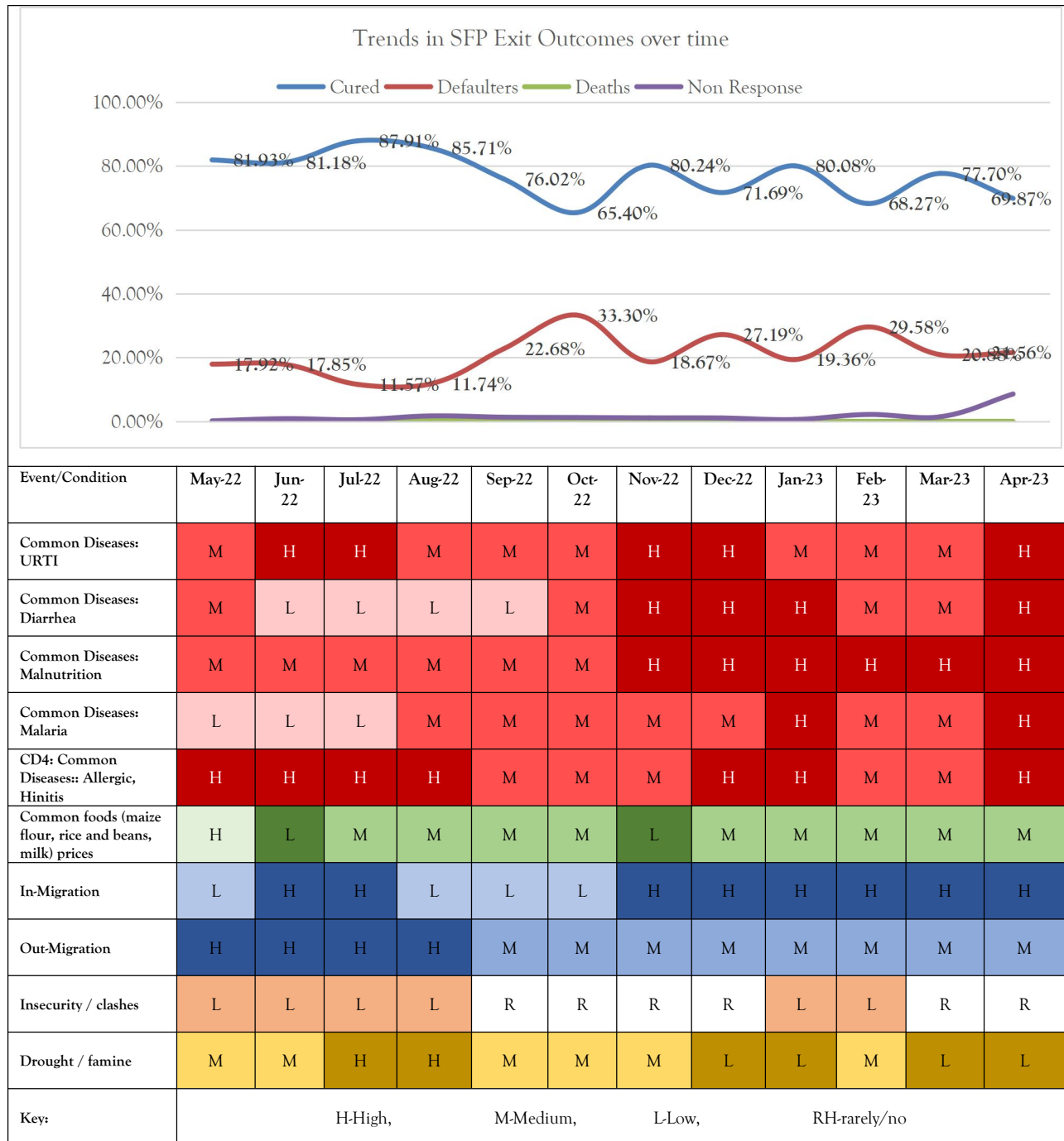


Figure 80: Trends in SFP Exit Outcomes over time

The county performed slightly above and below SPHERE standard for recovery and defaulter rates respectively, The county had cure rate of 76% (<75%) and a defaulter rate of 22% (>15%), 5 out of 7 sub counties are below SPHERE standard with an exception of Garissa SC and Lagdera SC, both had a recovery rate of 80% and above but only Garissa SC had a defaulter rate of less than 15%. (Fig. 81)

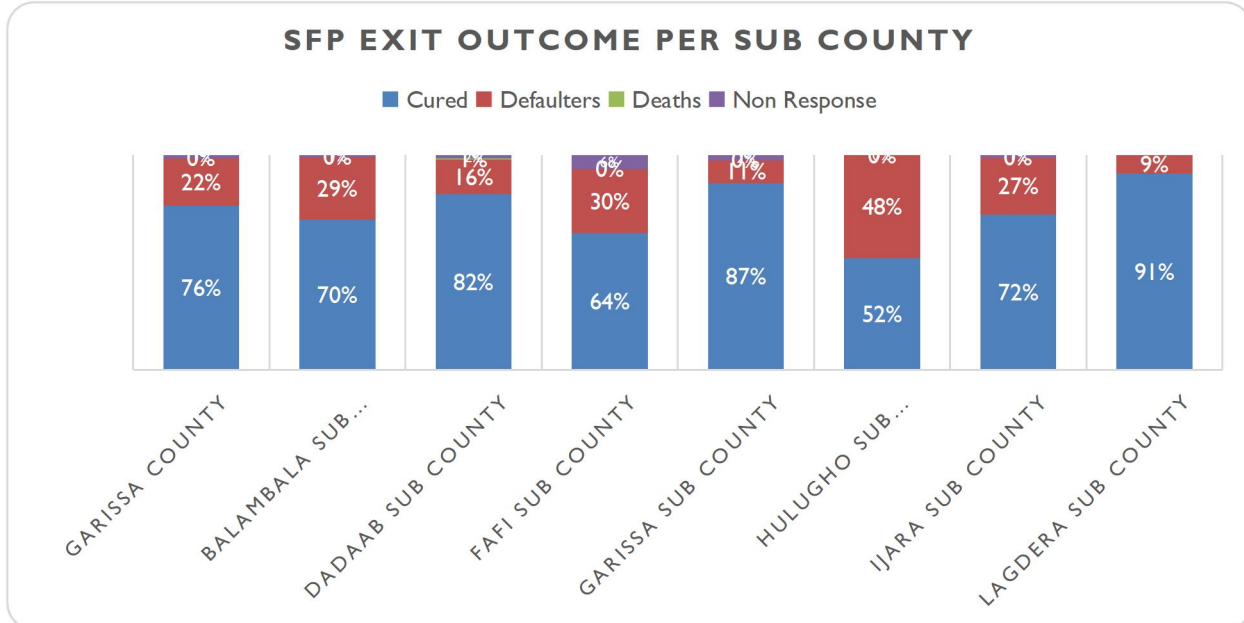


Figure 81: SFP Exit Outcomes per Sub County

Looking at exit outcome per facility in Balambala SC, only 5 out of 14 facilities performed within SPHERE standard; Dujis , Jarjara , Kuno, Raya and Mudey dispensaries. The other facilities performed below the standard, with Balambala SCH and Shimrey dispensary been worst performing. (Fig. 82)

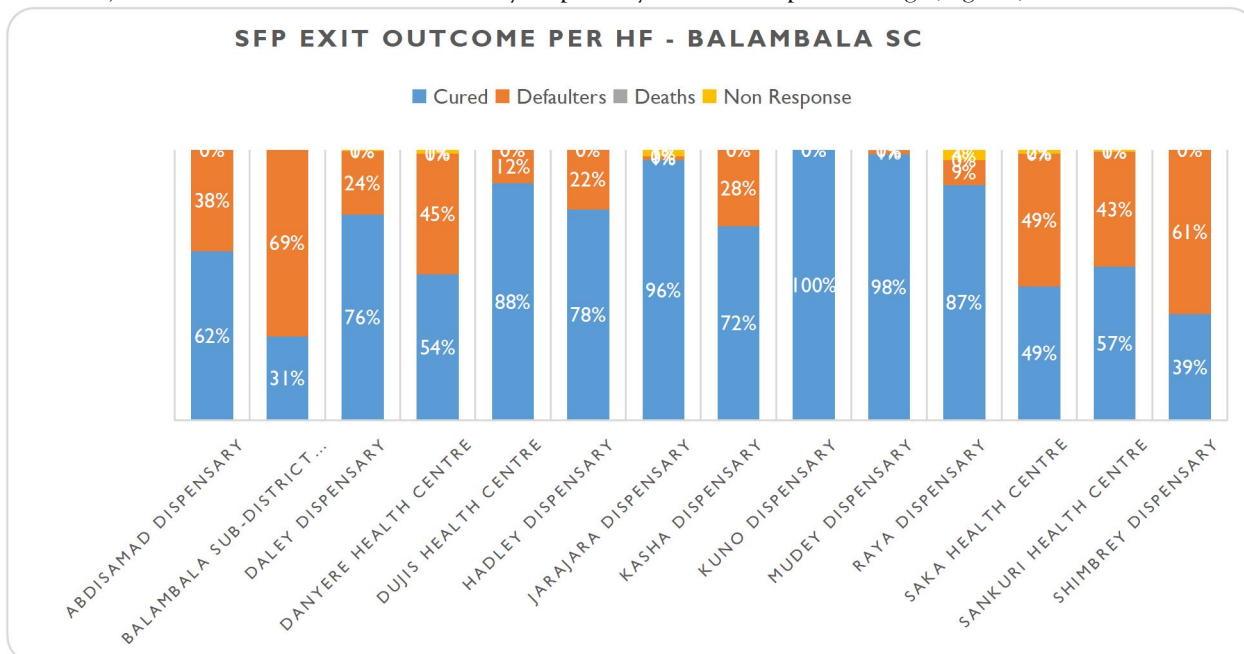


Figure 82: SFP Exit Outcome per H/F in Balambala Sub County

Looking at exit outcome per facility in Fafi SC, only 2 out of 8 facilities performed within SPHERE standard; Amuma and borehole-five dispensaries. The other facilities performed below the standard, with Galmagalla HC been worst performing. (Fig. 83)

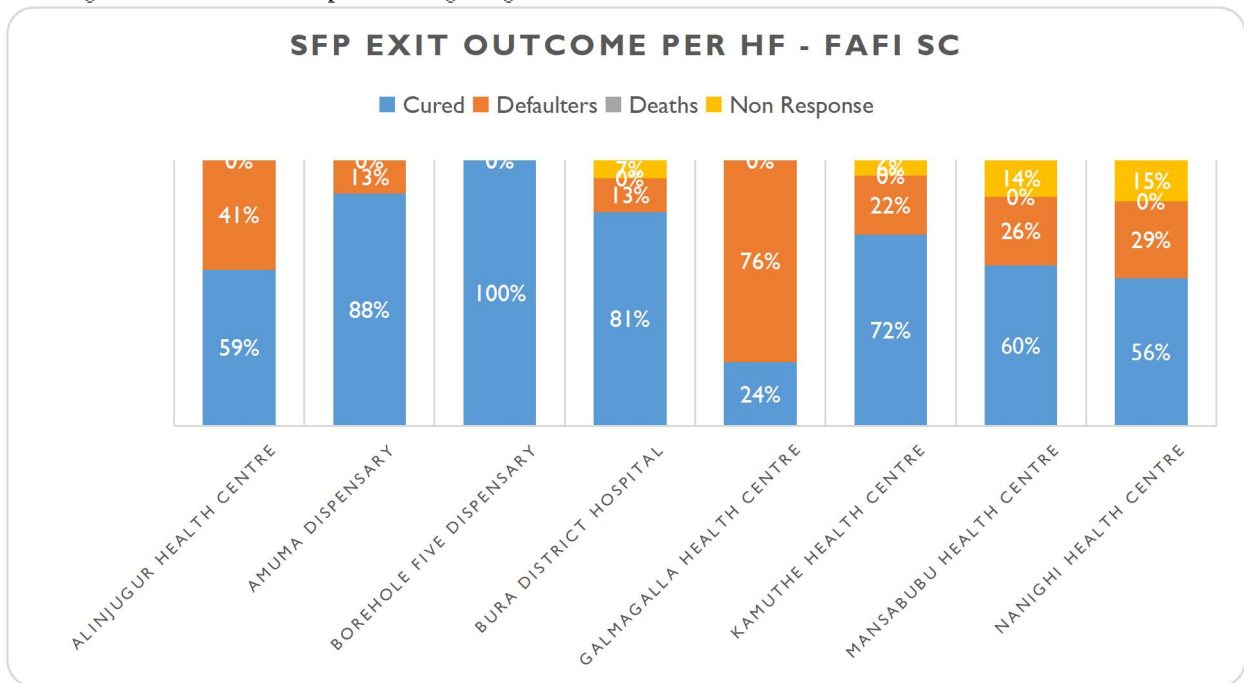


Figure 83: SFP Exit Outcome per H/F in Fafi Sub County

Looking at exit outcome per facility in Garissa SC, only 7 out of 13 facilities performed within SPHERE standard with Medina HC having a 100% recovery rate. The other facilities performed below the standard, with Korakora HC been worst performing. (Fig. 84)

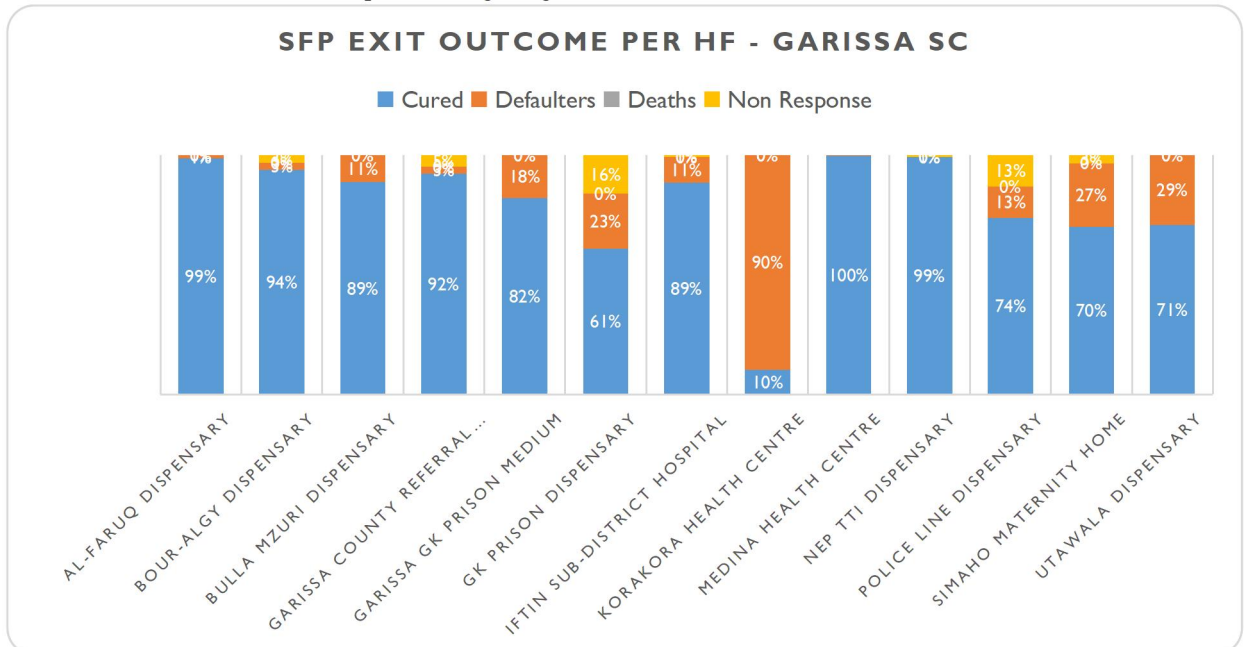


Figure 84: SFP Exit Outcome per H/F in Garissa Sub County

Looking at exit outcome per facility in Dadaab SC, only 7 out of 14 facilities performed within SPHERE standard; Dadaab, Bagahaley, Damajaley, Dertu, labasigale, liboi and Malaylay. The other facilities performed below the standard, with Kulan and saretho been worst performing. (Fig. 85)

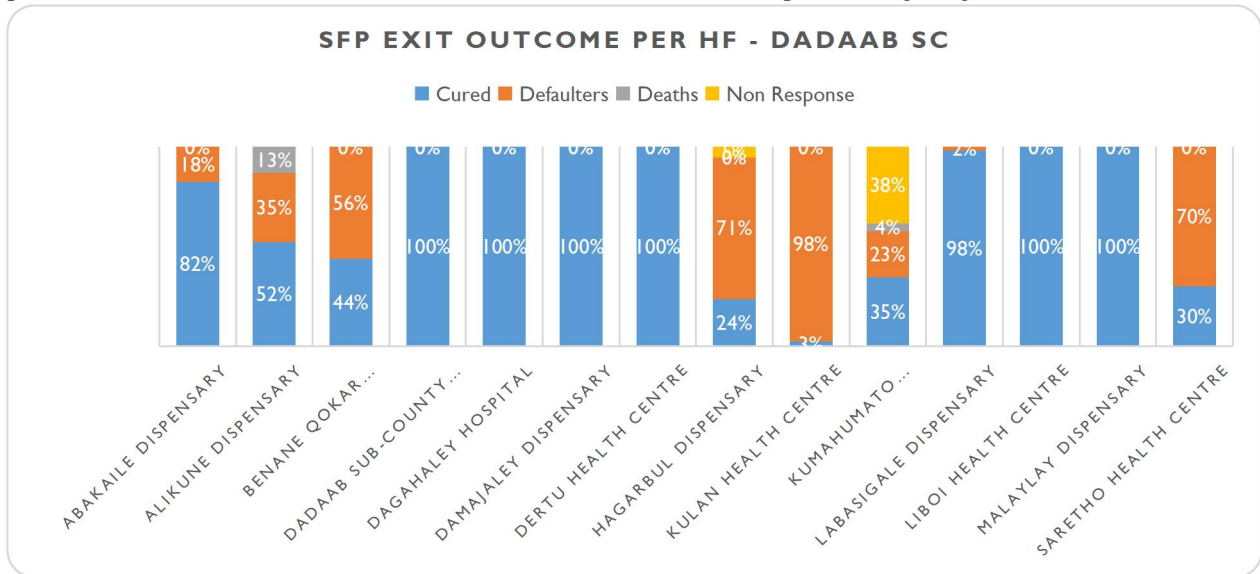


Figure 85: SFP Exit Outcome per H/F in Dadaab Sub County

Looking at exit outcome per facility in Hulugho SC, none of the facilities performed within SPHERE standard in the sub county. All the facilities performed below the standard, with Hulugho SCH been worst performing. (Fig. 86)

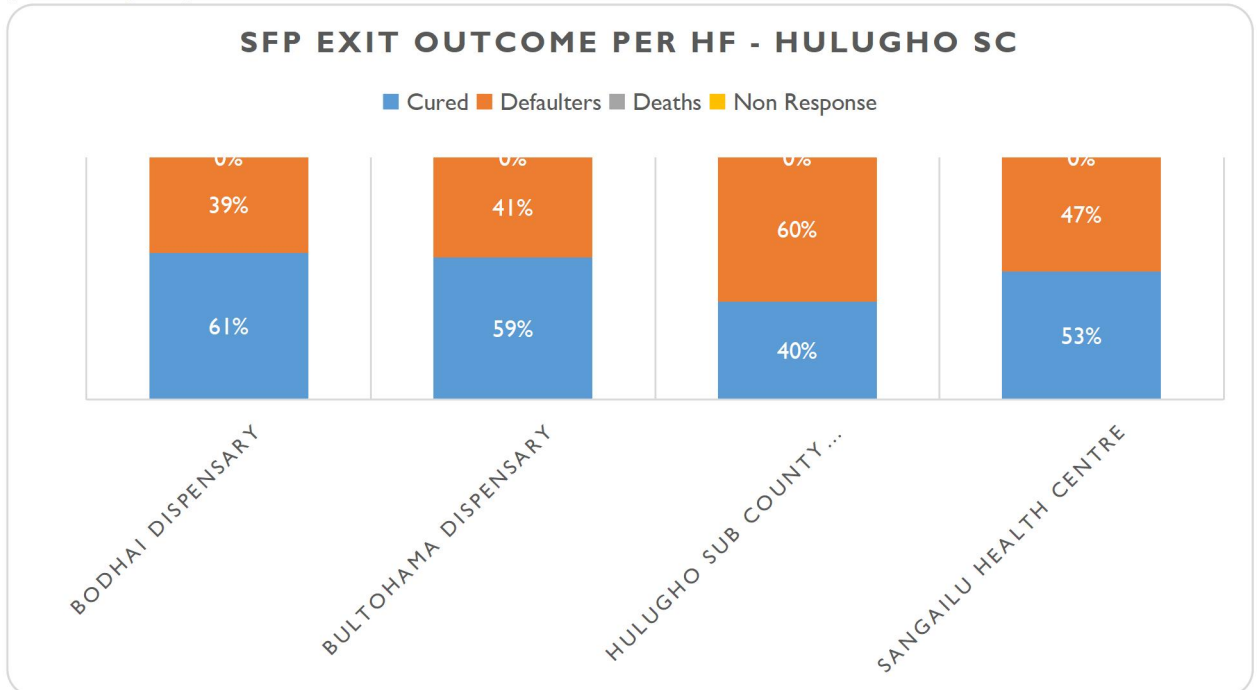


Figure 86: SFP Exit Outcome per H/F in Hulugho Sub County



Looking at exit outcome per facility in Ijara SC, only 4 out of 10 facilities performed within SPHERE standard; Gbaba, Ijara, Kotile and Ruqa. The other facilities performed below the standard, with Hara and Korisa been worst performing. (Fig. 87)

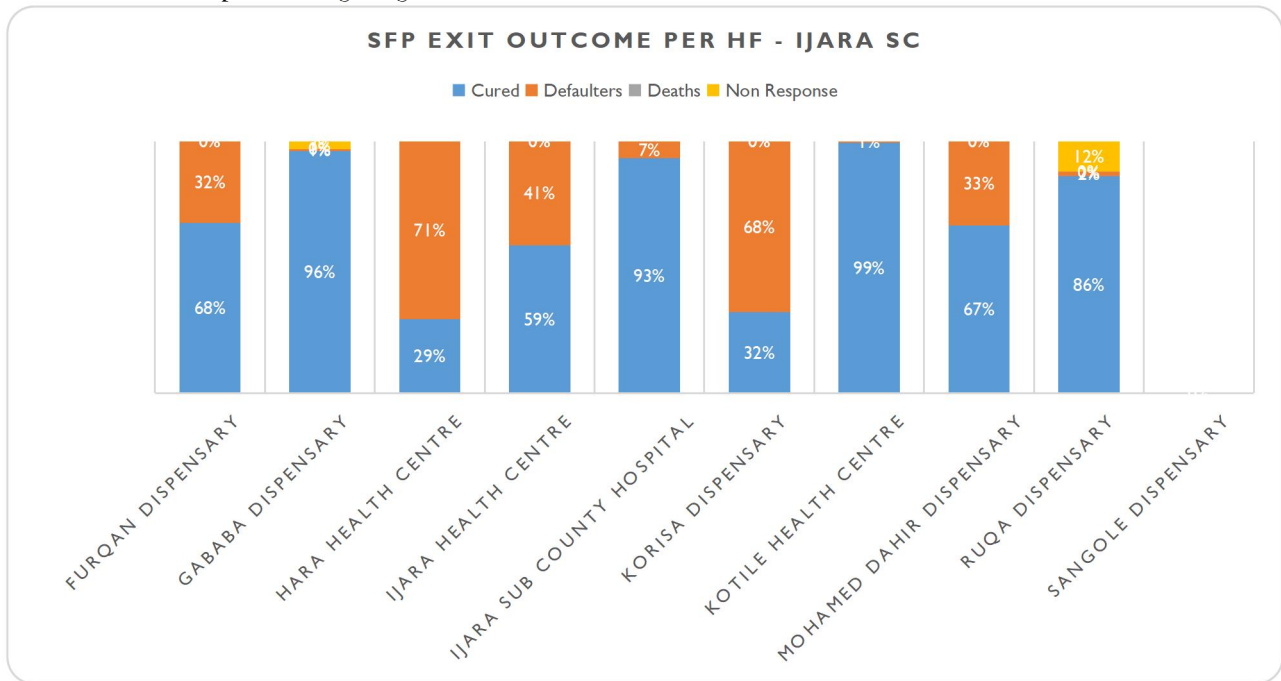


Figure 87: SFP Exit Outcome per H/F in Ijara Sub County

Looking at exit outcome per facility in Lagdera SC, 9 out of 12 facilities performed within SPHERE standard; Amuma and borehole-five dispensaries. No exits records documented in the register for Janju Dispensary. (Fig. 88)

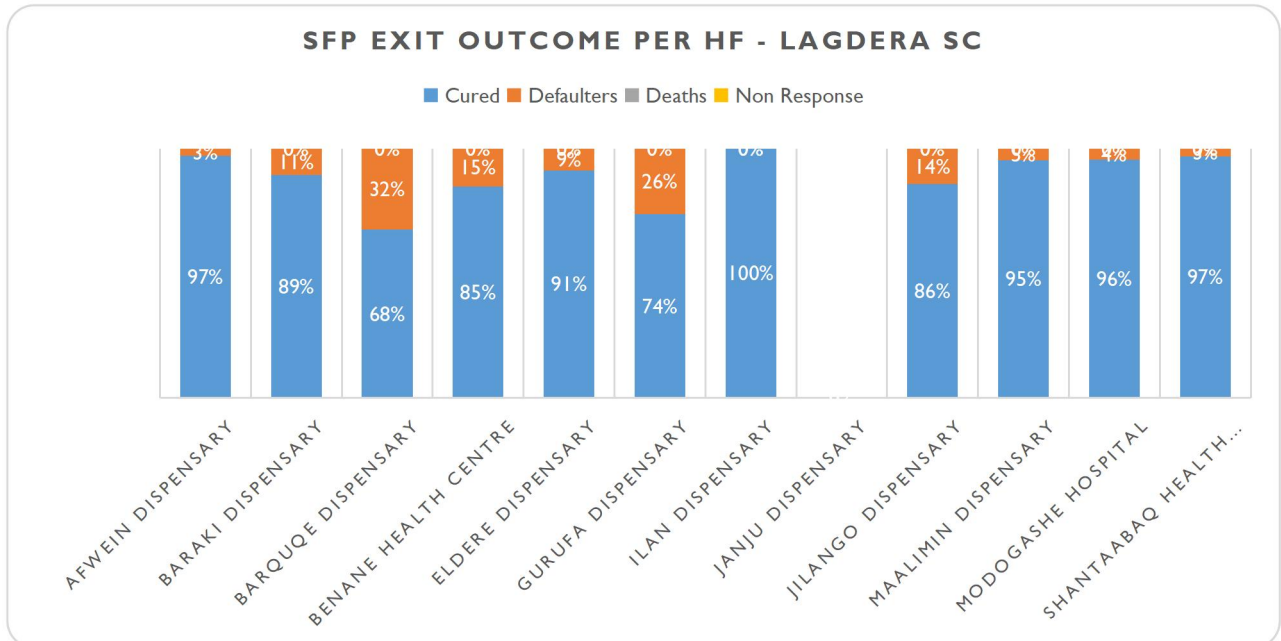


Figure 88: SFP Exit Outcome per H/F in Lagdera Sub County

SFP Exit Outcome: CURED

The proportion of cured MAM cases against total cases admitted is high when compared with total cured cases at the county level, while this varies across the sub counties. Balambala and Lagdera sub-counties performed better in number of MAM case exit as cured as well as the proportion of the exit to number of MAM case admitted to SFP program.

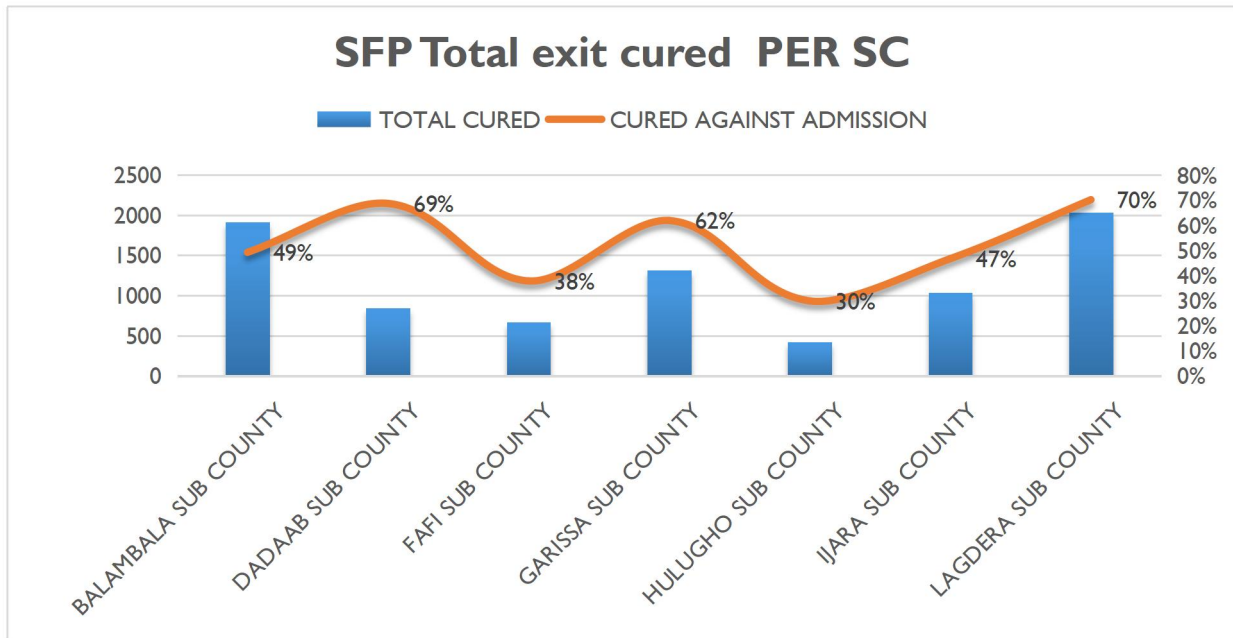


Figure 89: Total SFP Exit Cured against admissions per Sub County

Looking at Balambala SC; Mudey dispensary admitted the highest number of MAM cases compared to other facility. On proportion of MAM cases admitted, Mudey and Jarajara dispensary performed better compared to the rest. (Fig. 90)

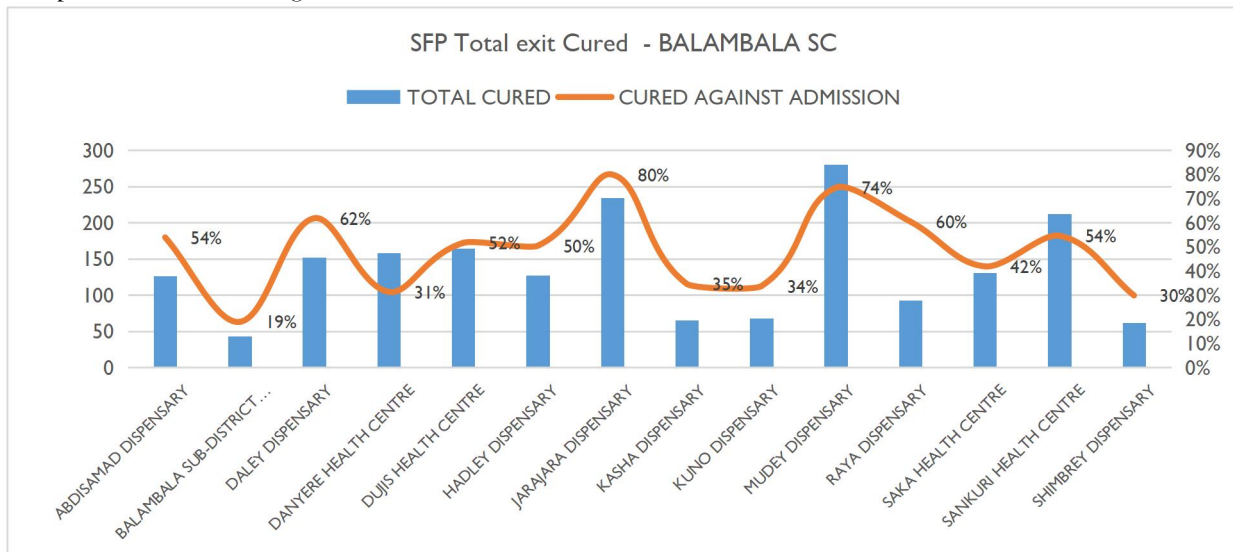


Figure 90: Total SFP Exit Cured against admissions per H/F in Balambala Sub County

Looking at Dadaab SC; Dadaab SCH admitted the highest number of MAM cases compared to other facility. On proportion of MAM cases admitted, Labasigale dispensary performed better compared to the rest. (Fig. 91)

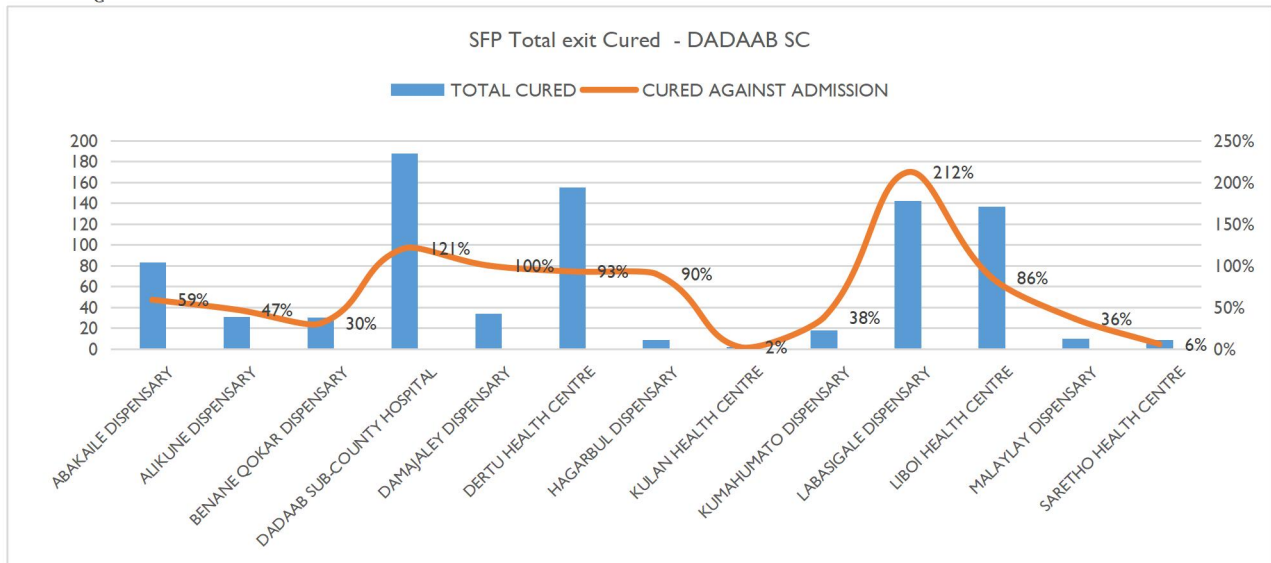


Figure 91: Total SFP Exit Cured against admissions per H/F in Dadaab Sub County

Looking at Fafi SC; Kamuthe HC admitted the highest number of MAM cases compared to other facility. On proportion of MAM cases admitted, Borehole-five dispensary performed better compared to the rest. (Fig. 92)

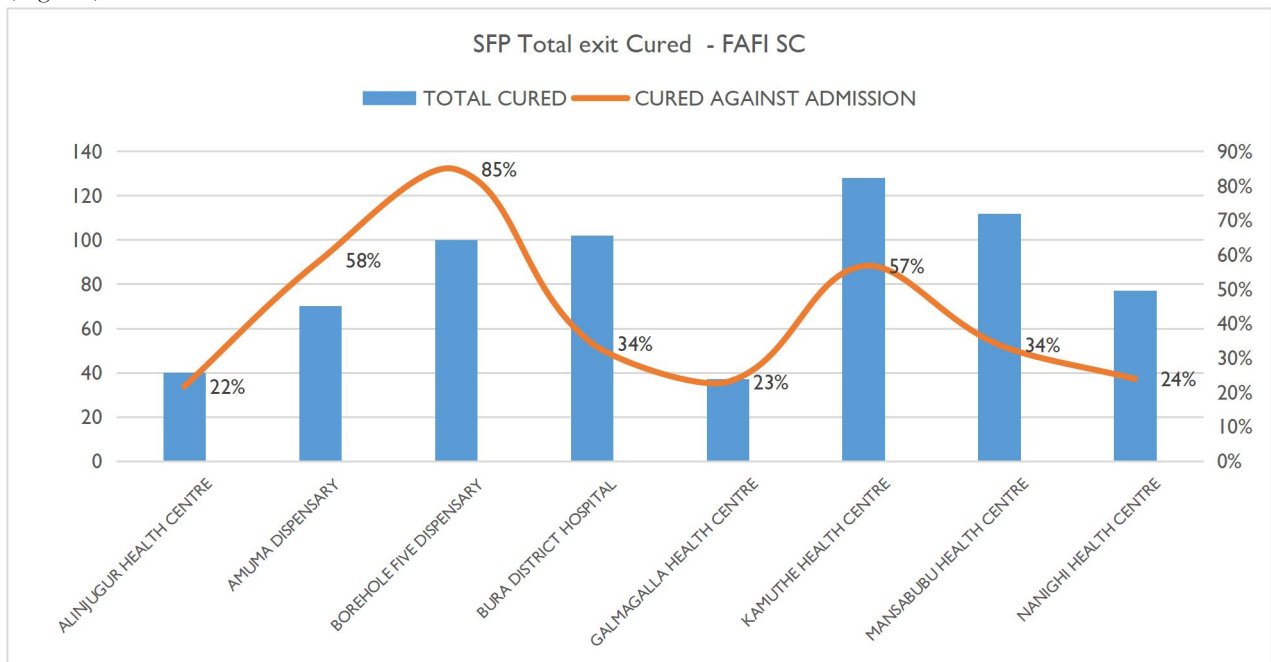


Figure 92: Total SFP Exit Cured against admissions per H/F in Fafi Sub County

Looking at Garissa SC; Medina HC and Ifin SCH admitted the highest number of MAM cases compared to other facility. On proportion of MAM cases admitted, Ifine, Medina and police-line performed better compared to the rest. (Fig. 93)

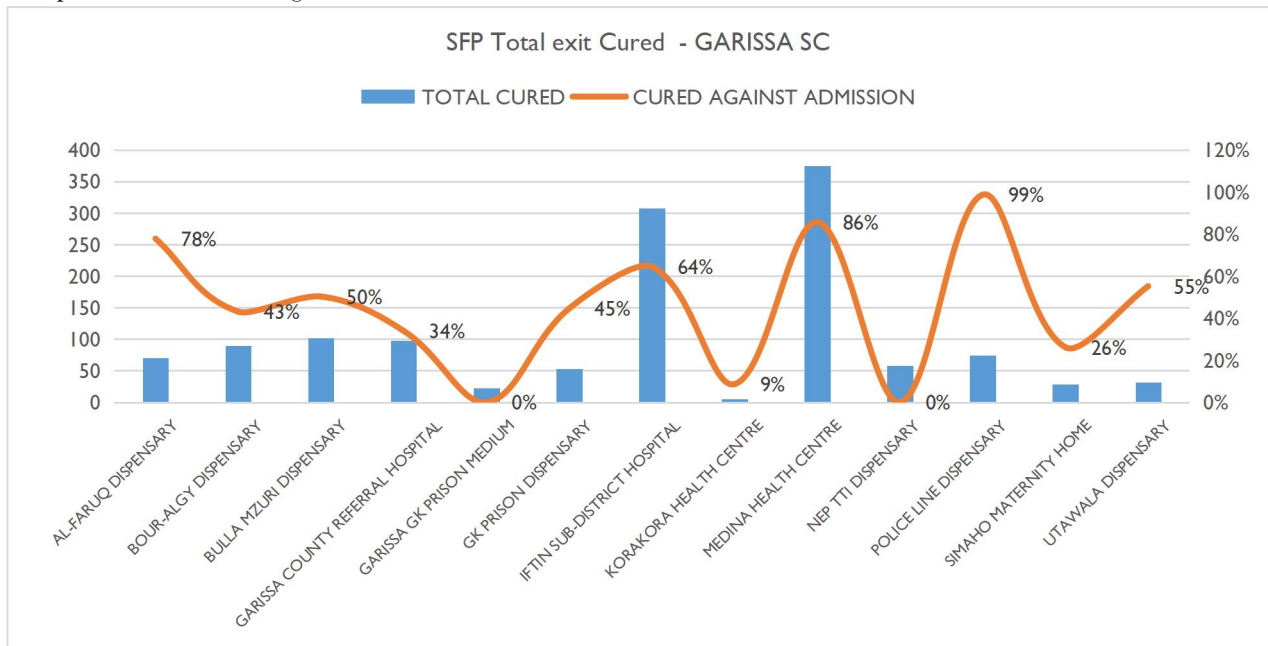


Figure 93: Total SFP Exit Cured against admissions per H/F in Garissa Sub County

Looking at Hulugho SC; Sangailu HC admitted the highest number of MAM cases compared to other facility. On proportion of MAM cases admitted, all facilities performed the same with around 30% with an exception of Handaro and Jalish. (Fig. 94)

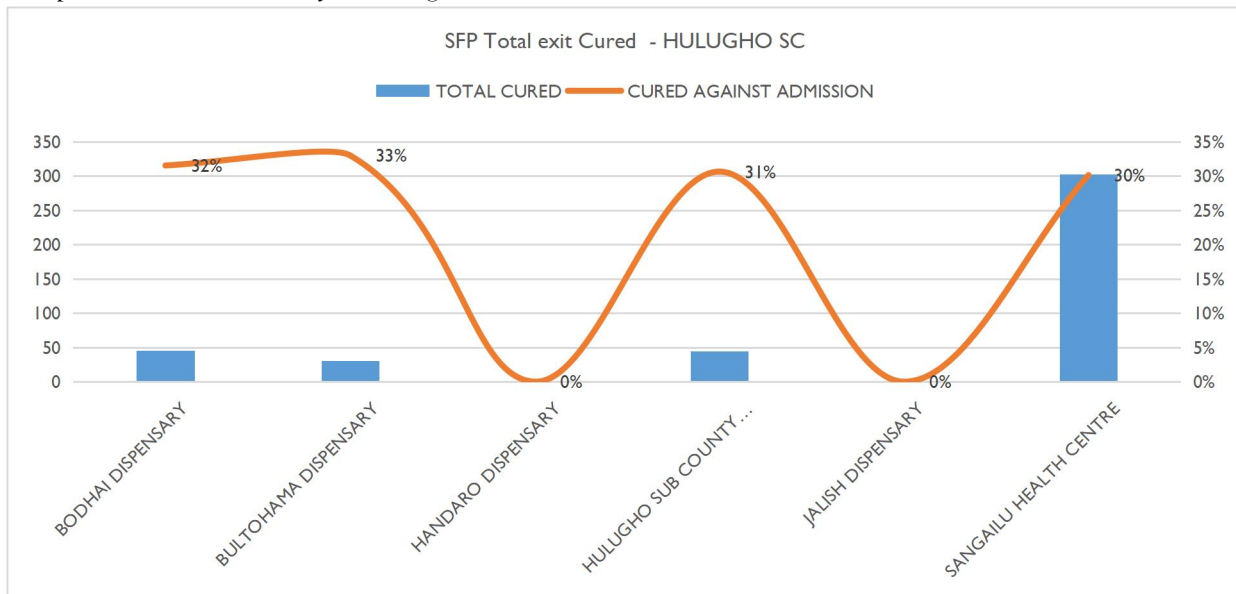


Figure 94: Total SFP Exit Cured against admissions per H/F in Hulugho Sub County

Looking at Ijara SC; Furqan, Iara and Kotile admitted the highest number of MAM cases compared to other facility. On proportion of MAM cases admitted, Kotile HC performed better compared to the rest. (Fig. 95)

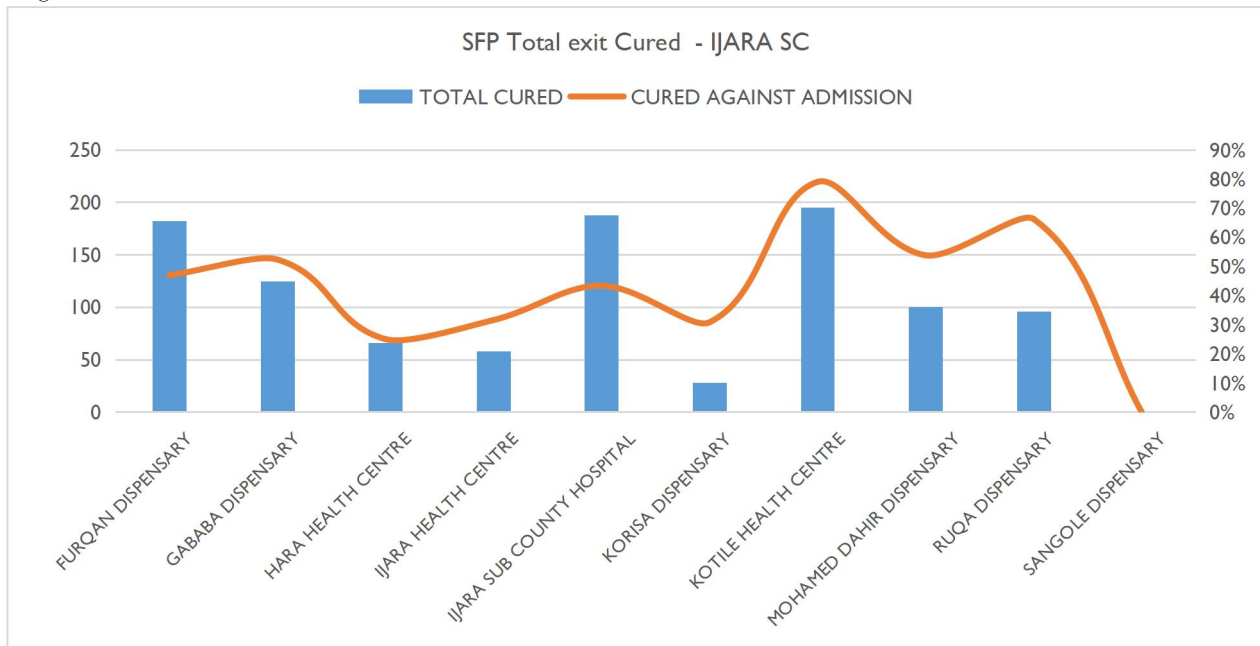


Figure 95: Total SFP Exit Cured against admissions per H/F in Ijara Sub County

Looking at Lagdera SC; Afwen dispensary admitted the highest number of MAM cases compared to other facility. On proportion of MAM cases admitted, Most facility performed better with more than 50% admitted to SFP program. (Fig. 96)

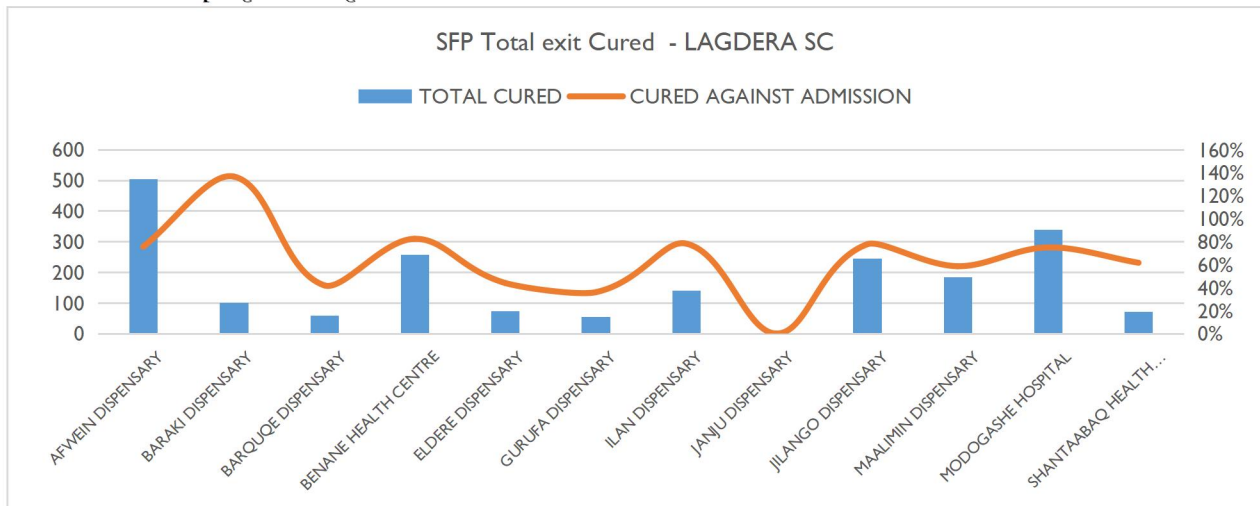


Figure 96: Total SFP Exit Cured against admissions per H/F in Lagdera Sub County

### WHZ score at Discharge Cured from SFP

SFP program in Garissa observed the treatment protocol and the appropriate discharge criteria, where most cases discharged as cured from SFP were beyond -2SD, with the Median WHZ score at discharge cured being < -1 SD to ≥2 SD (median value = 2,879). A few cases of early discharge when the clients are still



MAM by WHZ score, observed more in Balambala and Hulugho Sub Counties, indicating case mismanagement, attributed to mix up of admission and discharge criteria.

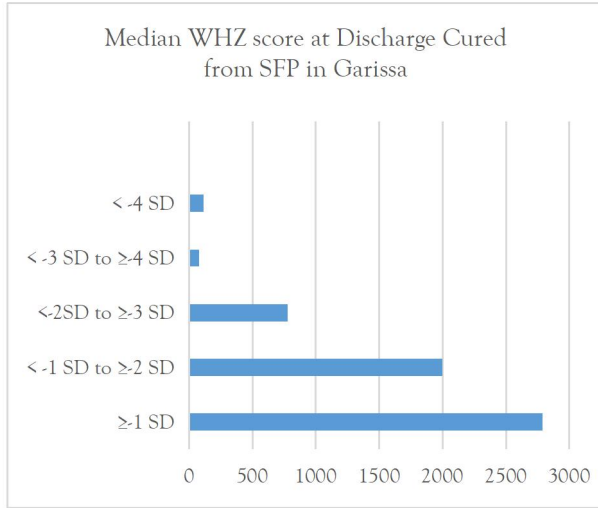


Figure 97: Median WHZ score at Discharge Cured from SFP in Garissa

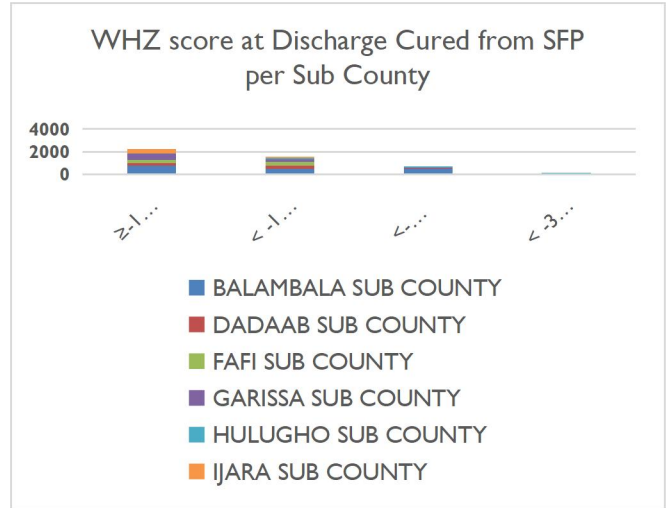


Figure 98: WHZ score at Discharge Cured from SFP per Sub County

### MUAC at Discharge Cured from SFP

Median MUAC at discharge cured from SFP was 12.8cm (Median value=1,241); indicating timely discharge. Early discharge (MUAC <12.5cm) observed in Dadaab, Garissa and Hulugho Sub Counties, attributed to mix up of admission and discharge criteria.

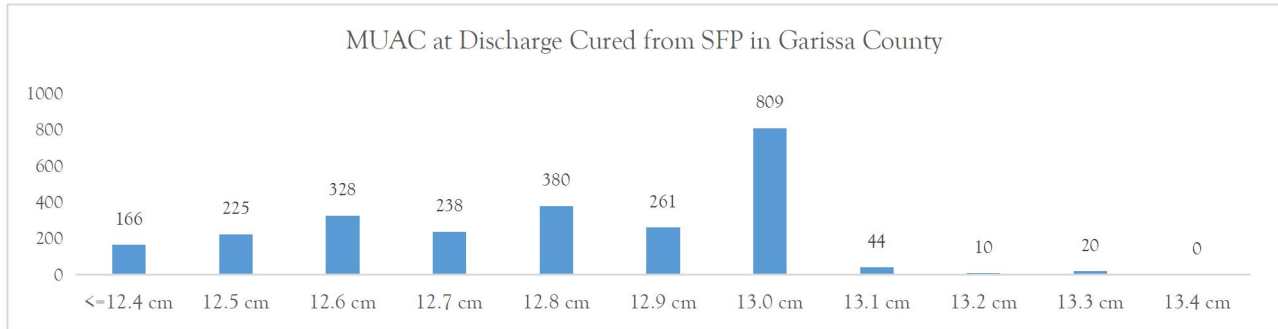


Figure 99: MUAC at Discharge Cured from SFP in Garissa County

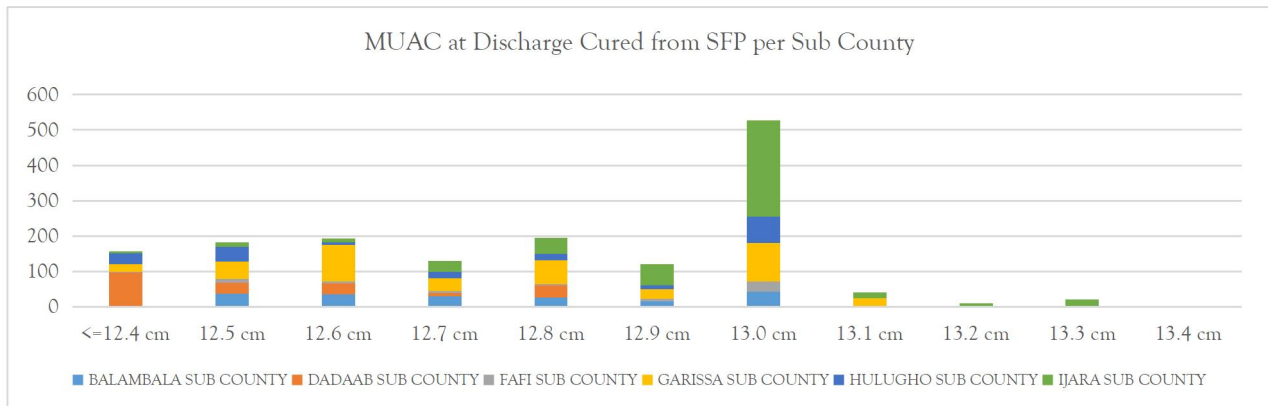


Figure 100: MUAC at Discharge Cured from SFP per Sub County



### Average Length of Stay before Exit Cured

The median average length of stay in SFP before discharge as cured is 10 weeks (5<sup>th</sup> visit) with median value being 3,694. Very early (<week 4) and very late (>12 weeks) discharge as cured (overstaying in SFP), also observed. This is a poor program performance, which can create a negative picture about the program, due to fatigue of the caregivers for overstaying in the program.

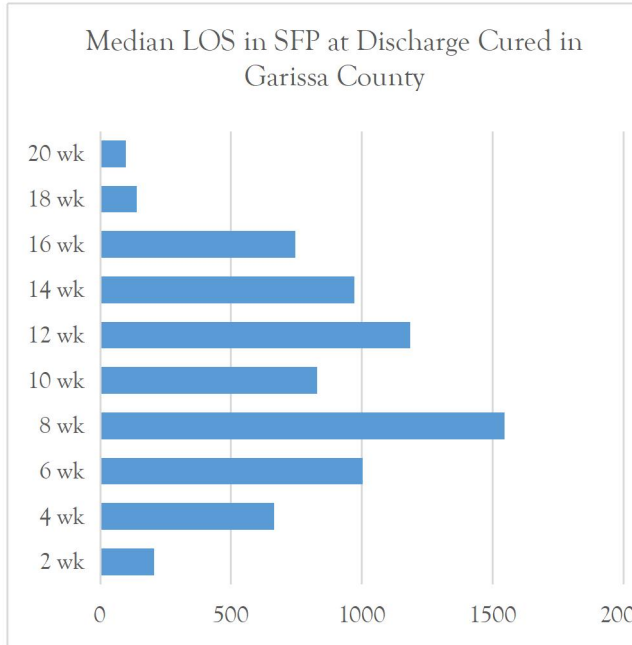


Figure 101: Median LOS in SFP at Discharge Cured in Garissa County

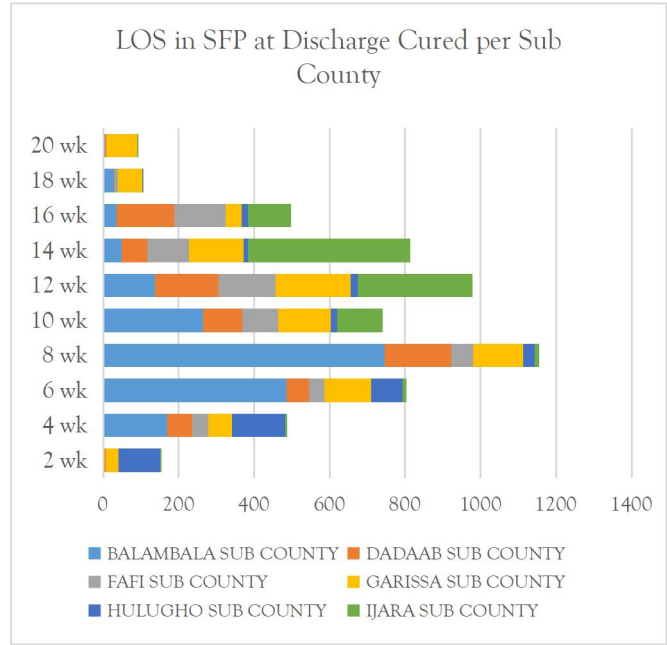


Figure 102: LOS in SFP at Discharge Cured per Sub County, Garissa

### SFP Exit Outcomes: Defaulting

When SFP defaulters were analyzed against admissions, it was observed that a high threshold of the admitted cases defaulted before discharge, with default rate surpassing the SPHERE threshold of below 15% in all the sub counties except Garissa Sub County; Lagdera (17%), Ijara (19%), Hulugho (28%), Garissa (13%), Fafi (16%), Dadaab (16%), Balambala (22%).

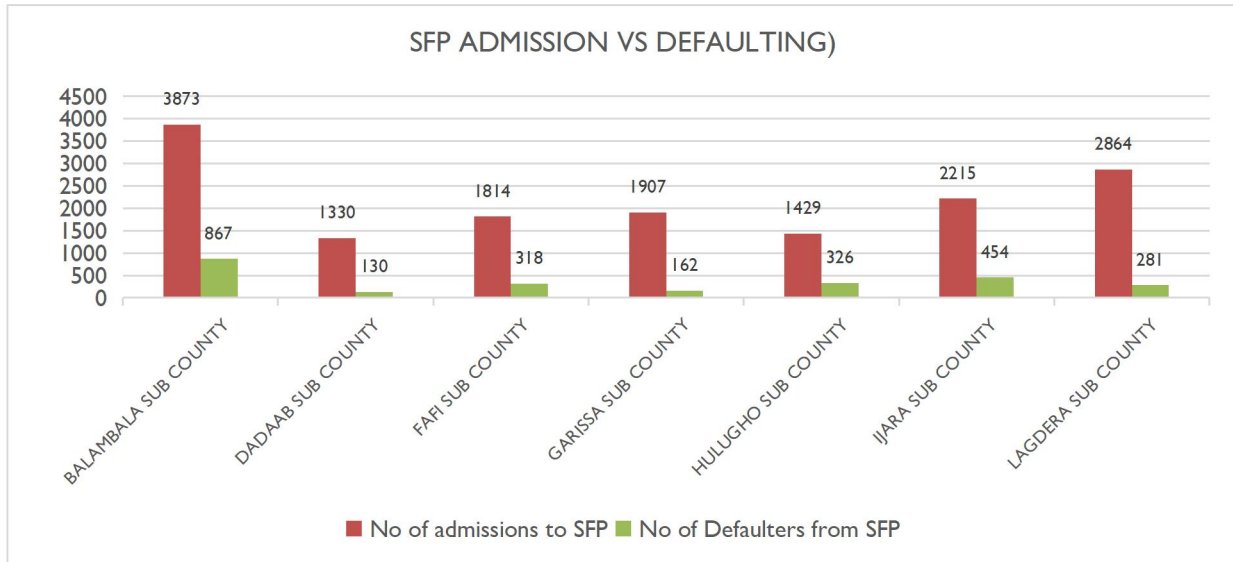


Figure 103: Defaulters against SFP admissions per sub county

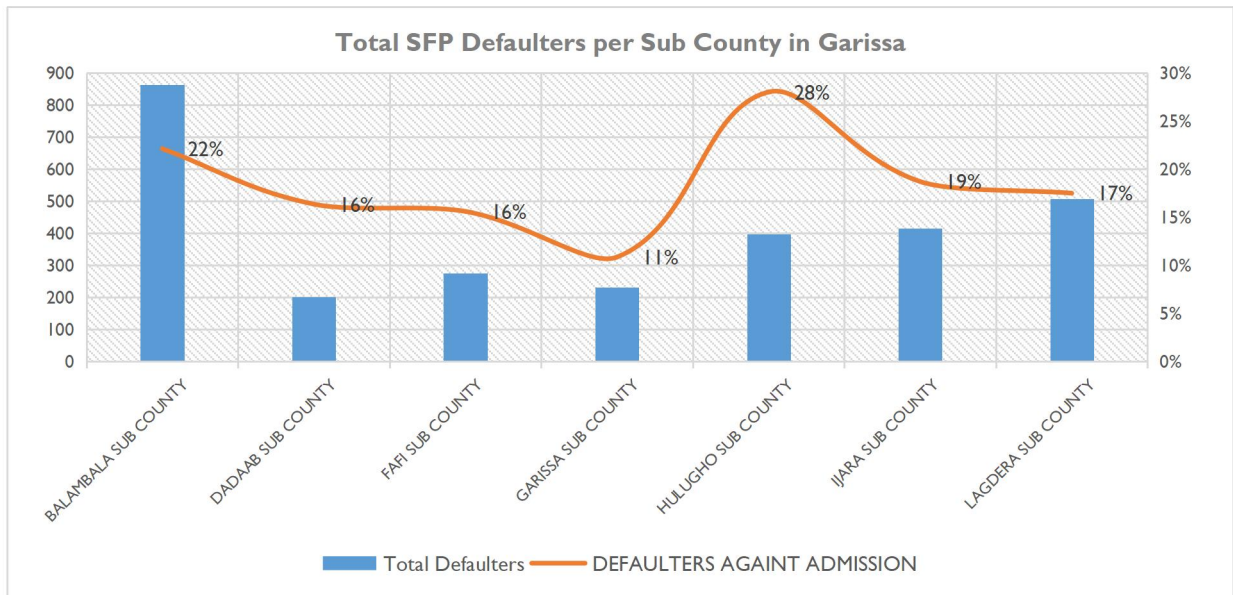


Figure 104: Total SFP Defaulters against admissions per Sub County in Garissa

### WHZ score at the time of default – SFP

The Median WHZ score at default was  $< -2SD$  to  $\geq 3 SD$ ; early defaulting while cases are still MAM by WHZ score; observed across the sub counties. This median WHZ score at discharge defaulted from SFP, is an indication of poor adherence to treatment protocol. Some cases exited as defaulters from SFP with a WHZ score of  $\geq -2SD$ , when already cured but with no *proof-of-cure*, across the sub counties. Wrong admission criteria observed where SAM cases by WHZ score are defaulting from SFP



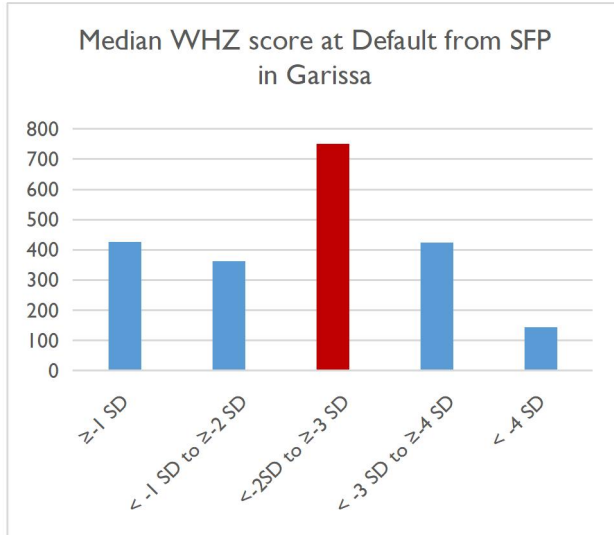


Figure 105: Median WHZ score at Default from SFP in Garissa

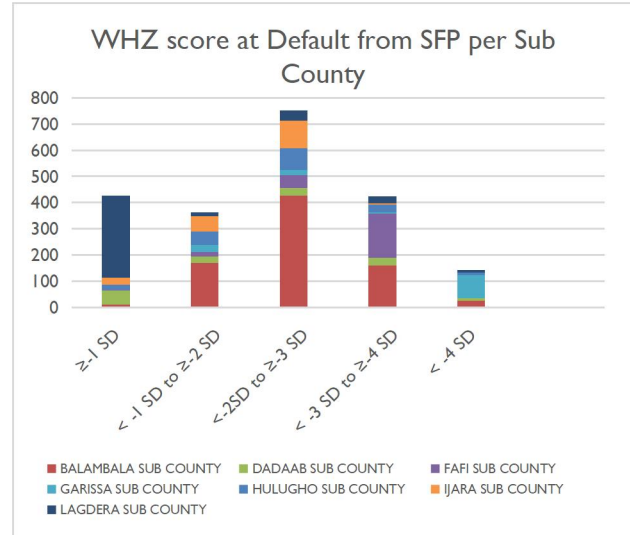


Figure 106: WHZ score at Default from SFP per Sub County

**MUAC at the time of default – SFP**

Median MUAC at default was 12.2cm, indicating very early defaulting while cases are still MAM by MUAC, a poor adherence to MAM treatment protocol. Most cases of very early defaulting were observed in Ijara and Lagdera Sub Counties. Quite a number of cases defaulted when already cured before being granted *proof-of-cure*; most cases observed in Ijara and Lagdera Sub Counties.

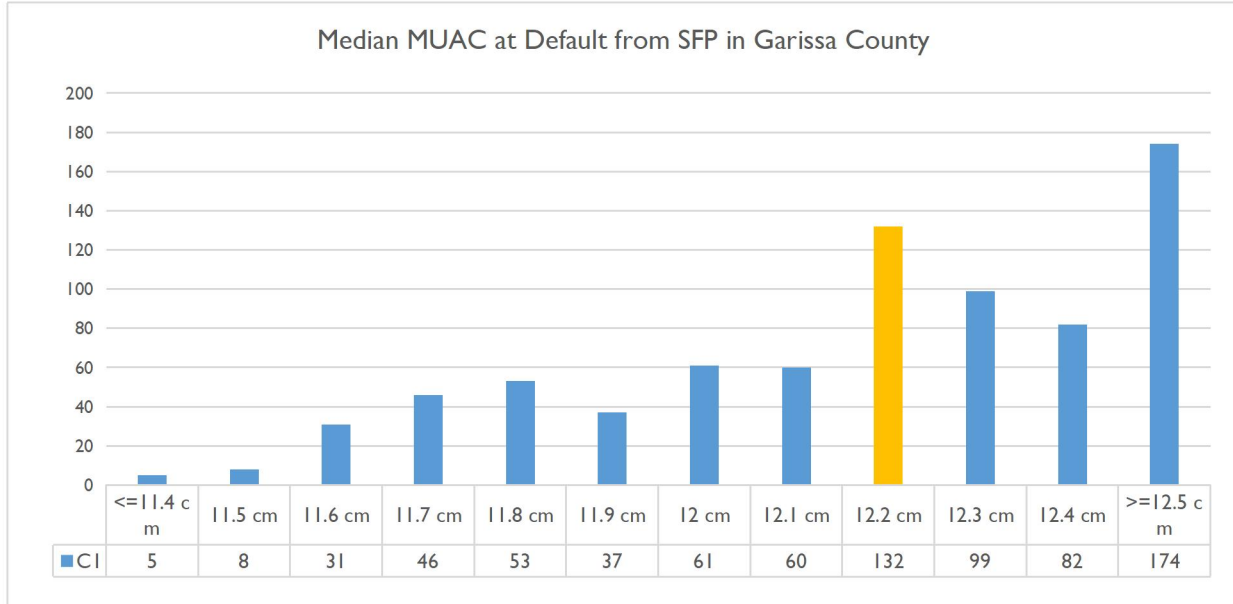


Figure 107: Median MUAC at Default from SFP in Garissa County

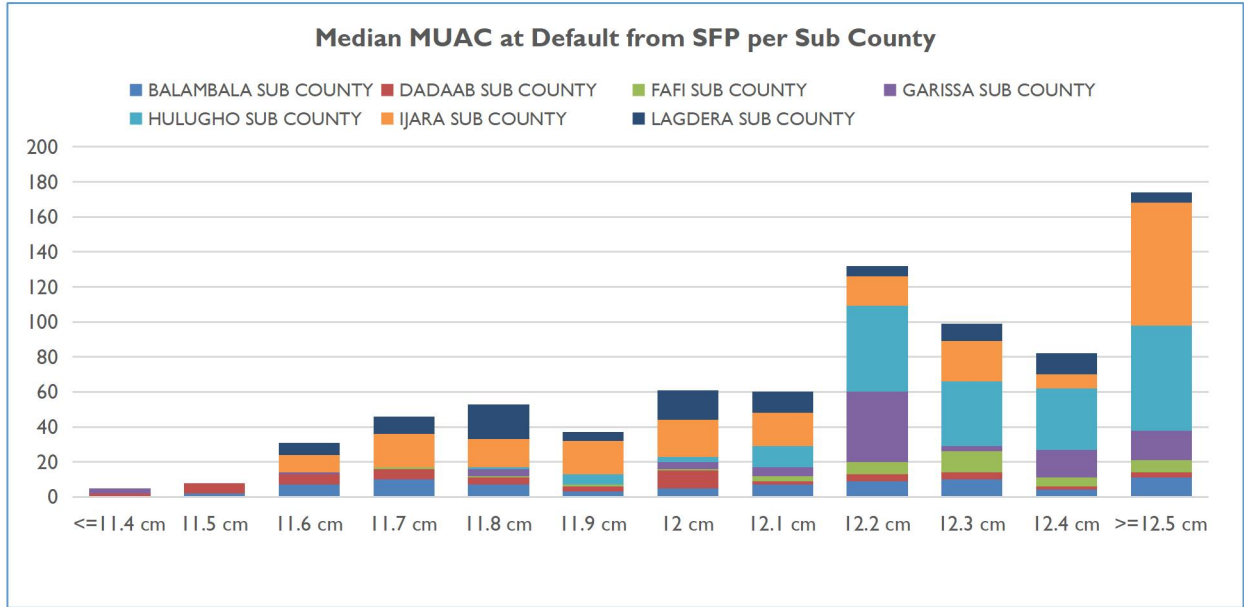


Figure 108: Median MUAC at Default from SFP Per Sub County

### Median LOS before default from SFP Program

The median LOS before discharge from SFP program as defaulter was 4 weeks (2<sup>nd</sup> visit) for all admissions, indicating very early default. All the sub counties Garissa have short LOS at default. Cases of late defaulting with longer LOS (>12 weeks) reported majorly in Lagdera Sub County.

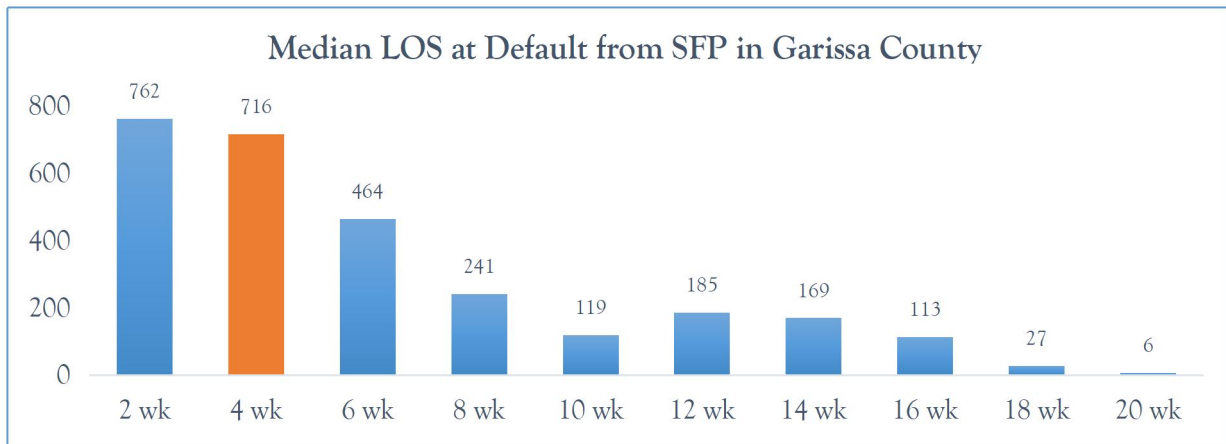


Figure 109: Median LOS at Default from SFP in Garissa County

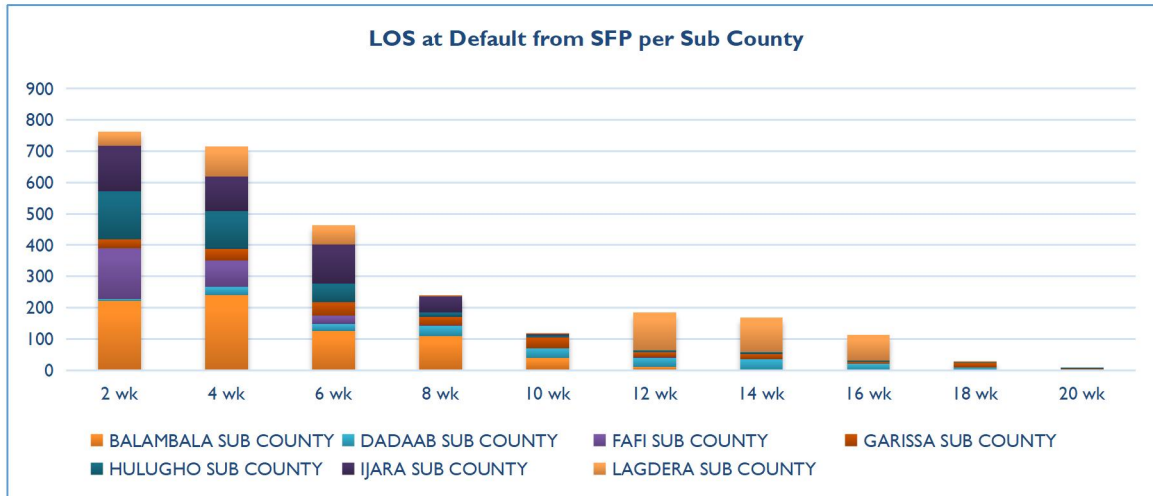


Figure 110: LOS at Default from SFP per Sub County

### IMAM Program – Commodity Stock Status

Availability of commodities for management of acute malnutrition in the service delivery point directly affects IMAM program coverage. Frequent commodity stock outs are highly associated with absenteeism and defaulting, hence poor program outcome. Amoxicillin, Malaria Rapid Test and ACT commodities had a high average stock out in weeks during the reporting period. Cumulatively, 27 and 39 health facilities in Garissa reported RUTF and RUSF stock out at least once in the past twelve months (May 2022 and April 2023). Dadaab Sub County reported the highest number of weeks for RUTF and RUSF stock out (almost every month), followed closely by Hulugho and Ijara Sub Counties during the reporting period. RUTF and RUSF commodities were largely associated with long LOS and defaulting in IMAM program in Garissa County.

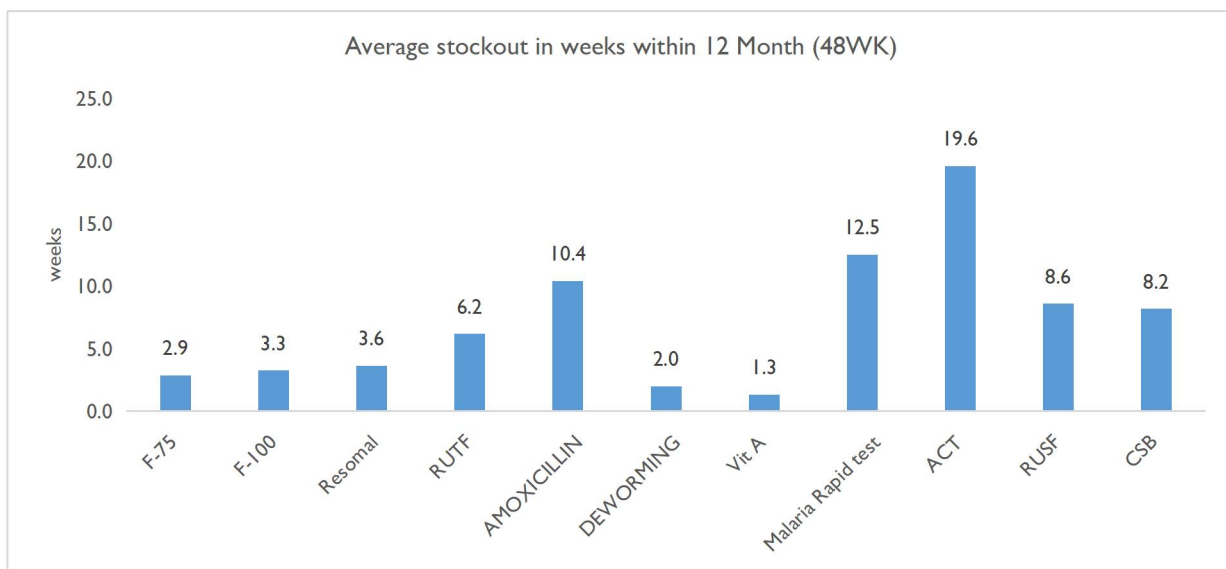


Figure 111: Average stock out in weeks for ALL commodities within 12 Month (48weeks)

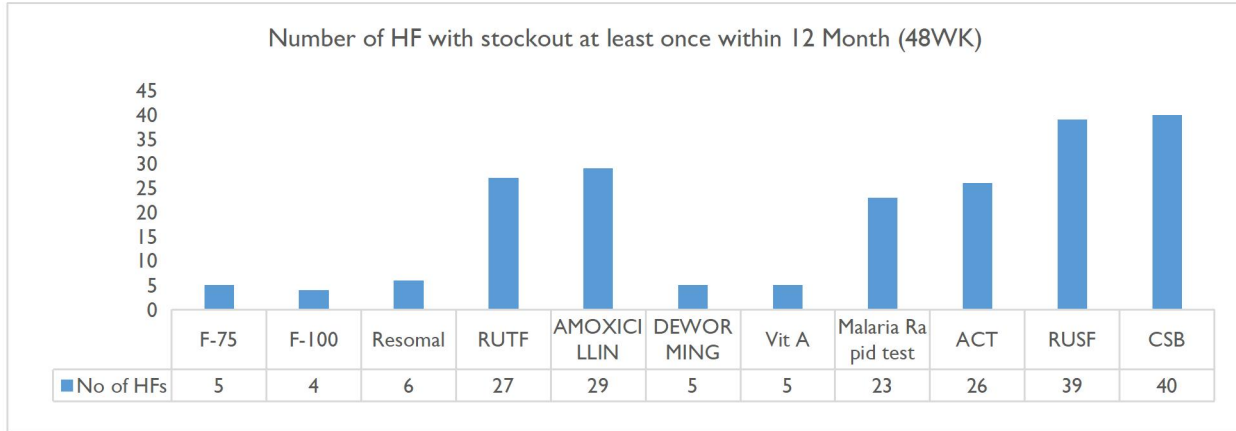


Figure 112: Number of HF with stock out at least once within 12 Months (48 weeks)

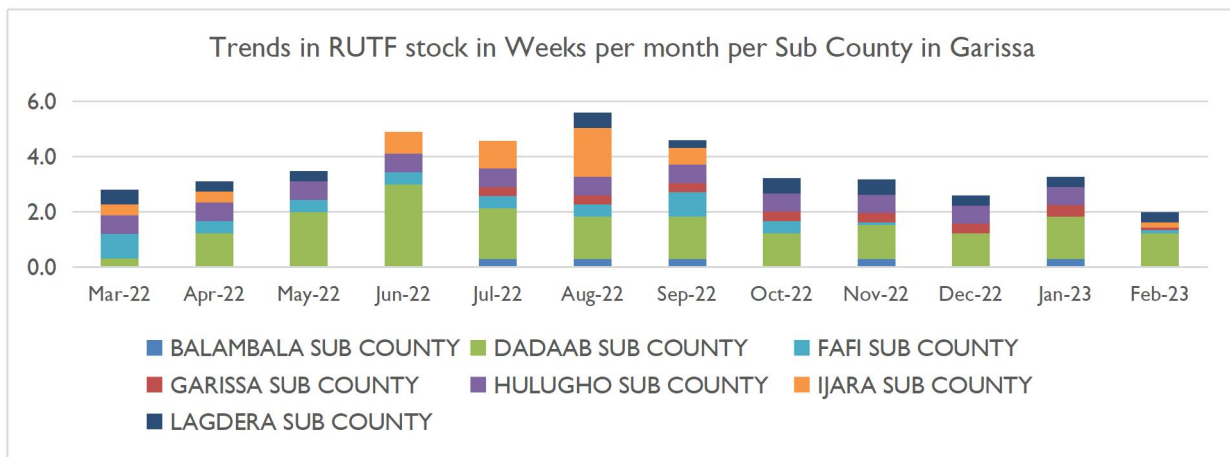


Figure 113: Trends in RUTF stock in Weeks per Sub County in Garissa

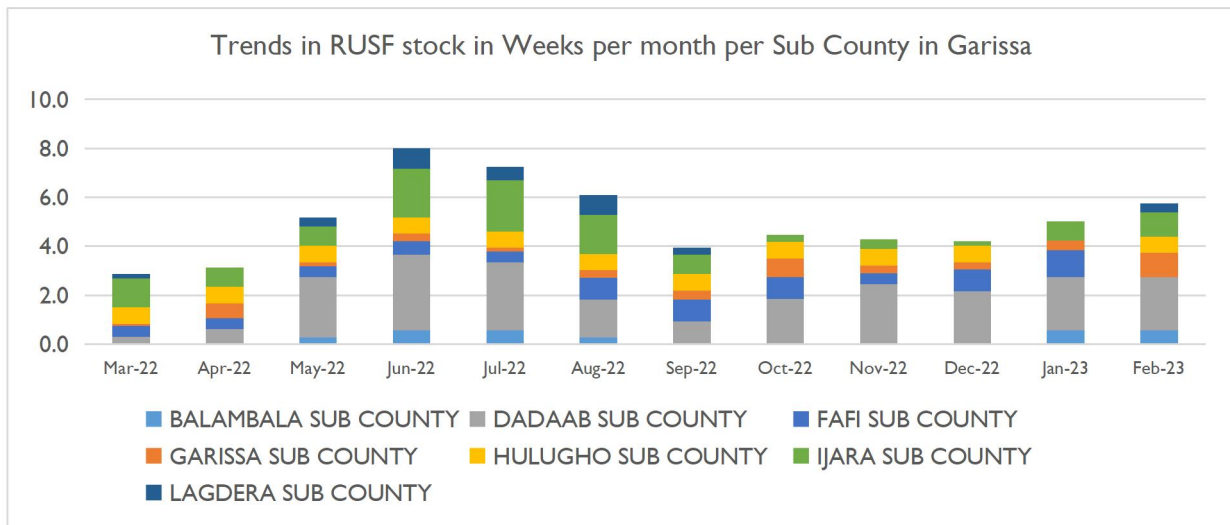


Figure 114: Trends in RUSF stock in Weeks per Sub County in Garissa

## QUALITATIVE DATA ANALYSIS

### Sampling for Data Collection

Purposive sampling was used based on the findings of Quantitative data analysis on areas of High and Low Coverage. Data was collected through triangulation by source and method from the sampled sites. Boosters and barriers to IMAM program coverage were established through the BBQ (Boosters, Barriers and Questions) tool. The following areas were covered;

- Understanding of malnutrition and knowledge of the signs of malnutrition
- Pathways to health care and Knowledge on the existence of treatment
- Appreciation of the service and quality of the care
- Community mobilization
- Barriers and boosters to access and coverage
- Perception of coverage

Table 6: Movement Plan during Qualitative Data Collection

	Team 1	Team 2	Team 3	Team 4	Team 5	Team 6	Team 7
Days 1: 29/05/23	SANGAILU HC  WAKAB. HAREY KARTAS	NANIGHI HC  GUYO NANIGHI TOWN	IFTIN SCH  ZIWANI IFTIN TOWN	KORISA DISP.  ISKADEG KORISA TOWN	BENANE HC  BULA HADUN BULA MOBILE	HAGARBUL DISP  BULA BILCIL BULA BERIA	UTAWALA DISP  NGAMIA ROAD BULA ADAAN GARISA NDOGO
Days 2: 30/05/23	HULUGHO HOSPITAL TOWN SHIP IREQARWAN GESIREB	BURA HOSPITAL  JAMBELE BURA TOWN	BALAMBALA HSPITAL  BURA DANSA BULA HOSPITAL	KOTILE HC  KOTILE TOWN ABALATIRO	BARAKI DISP.  BUYO BOMBI QALANQAAL	DERTU HC  BULA KOWSAR BULA HAGAR	NENAP DISP.  BULA KAMBI BULA VUMBI
Days 3: 31/05/23	BOTHAI DISP.  MLIMANI GAWAAN BOTHAI TOWN SHIP	GK PRISON MEDIUM DISP.  DEKABUREY GK MEDIUM T	KUNO DISP.  KUNO VILLAGE BULA HAGAR	FURQAN DISP.  BULA GONA BULA QALANQAL	GURUFA DISP.  BULA AWAQ BULA HAGAR	ABAKAILE DISP.  BULA BANAAN BULA HUUD	MADINA HC  BURBURIS BULA HIGHLAND BULA MADINA
Days 4: 01/06/23	JALISH DISP.  HARERI QAMUTHU BULA GOGON	BOREHOLE 5 DISP.  BULA WEYN BOREHOLE 5 TOWN	SHIMBREY DISP.  BULA PRIMARY GUTOY	MASALAN SCH  ARISHLEY MASALAN CBD	MODOGASHE SCH  BULA KULAN BULA JUA	DADAAB SCH  BULA DAIDAI BULA CRUSH	PGH  BULA ISKADEG BULA EID GRD

## Organization of the teams and sites to visit during data collection process

Seven (7) teams were organized to conduct the qualitative data collection in 28 sites across Garissa County for a period of four days. Daily meetings after a day’s data collection were held to discuss the findings and listing of the Boosters, Barriers and Questions (BBQ). From the plenary sharing of experiences and areas to improve in data collection skills, it was found out that there were scenarios of missed opportunities for probing. Listing of the BBQs from the data collected enabled triangulation of data by source and method. Each booster and barrier were marked with symbols for the sources and abbreviations for the methods used to collect the data to ensure that the findings have been validated. Questions and issues that need to be resolved by additional data collection, including findings that have not been confirmed by triangulation were listed in Question section.

Table 7: Organization of Qualitative Data Collection

		Days 1: 29/05/23	Days 2: 30/05/23	Days 3: 31/05/23	Days 4: 01/06/23
HPM – Health Program Manager, HCP – Health Care Provider, CHV – Community Health Volunteer, BSC-Beneficiary of SAM case,		BCMC-Beneficiary of Cured MAM case, SCD-caregiver of SAM case defaulter, MCD-caregiver of MAM case defaulter, CU5-Caregiver of Under 5, MSG-mother to mother support group		CHEM-Chemistry attendant THP-traditional health practitioner/Traditional Birth attendant RELG-religious leader TEC-Teacher	CHF-Chief SHOP-Shop Attendant LAYP-Lay Person BMC-Beneficiary of MAM case, BCSC-Beneficiary of Cured SAM case,
Team 1	Source	HCP(1), CHV(1), BSC(1), BMC(1), BCSC(1), BCMC(1), CU5(1/4), TEC(1), CHEM(1), THP(0), RELG(1), VLGE(1), SHOP(1), LAYP(1)	HCP(1), CHV(1), BSC(1), BMC(1), BCSC(1), BCMC(1), CU5(1/4), TEC(1), CHEM(1), RELG(1), VLGE(1)	HCP(1), CHV(1), BCMC(1), CU5(1/5), MCD(1), TEC(1), CHEM(1), RELG(1), VLGE(1), SHOP(1), LAYP(1)	HCP(1), CHV(1), BCMC(1), CU5(1/5), MCD(1), TEC(1)
	Method	KII(4), SSI(5), FGD(1), IGD(1)	KII(4), SSI(5), IGD(1)	KII(4), SSI(5), IGD(2)	KII(3), SSI(2), IGD(1)
Team 2	Source	HCP(1/4), CHV(1), BMC(1/5), BCSC(1), BCMC(1), MCD(1), CU5(1/4), MSG(1/4), TEC(1), CHEM(1), THP(1), RELG(1), CHF(1), SHOP(1), LAYP(1)	HPM(1), HCP(1), CHV(1/7), BSC(1), BMC(1), BCMC(1), SCD(1), MCD(1), CU5(1/6), MSG(1/5), TEC(1), THP(1), CHF(1), VLGE(1), LAYP(1)	HCP(1), CHV(1), BMC(1), BCSC(1), CU5(1/4), CHEM(1), RELG(1), VLGE(1), SHOP(1)	HCP(1), CHV(1), BSC(1/5), BMC(1/6), SCD(1), CU5(1/4), THP(1)
	Method	KII(3), SSI(8), FGD(3), IGD(1)	KII(3), SSI(8), FGD(2), IGD(2)	KII(3), SSI(5), IGD(1)	KII(2), SSI(2), FGD(2), IGD(1)
Team 3	Source	HPM(1), HCP(1), CHV(1), BMC(1), BCSC(1), BCMC(1), SCD(1), MCD(1), CU5(1/6), MSG(1/4), TEC(1), CHEM(1), THP(1), SHOP(1)	HCP(1), CHV(1), BSC(1), BMC(1), BCSC(1), BCMC(1), MCD(1), CU5(1/4), RELG(1), CHF(1), LAYP(1)	HCP(1), CHV(1), BSC(1/5), BMC(1/5), CU5(1/7), MSG(1/6), THP(1), CHF(1), VLGE(1), SHOP(1)	HCP(1), CHV(1/4), BSC(1/4), BMC(1/3), SCD(1), MCD(1), CU5(1/8), TEC(1), CHEM(1), THP(1), RELG(1), VLGE(1), LAYP(1/5)



	<b>Method</b>	KII(5), SSI(7), FGD(2)	KII(2), SSI(8), IGD(1)	KII(1), SSI(5), FGD(3), IGD(1)	KII(3), SSI(5), FGD(3), IGD(2)
<b>Team 4</b>	<b>Source</b>	HCP(1), CHV(1/5), BMC(1), BCSC(1), BCMC(1), SCD(1), MCD(1), CU5(1/4), MSG(1/5), RELG(1), VLGE(1), LAYP(1)	HCP(1), CHV(1/4), BMC(1), BCSC(1), BCMC(1), CU5(1/4), MSG(1/4), TEC(1), CHEM(1), THP(1), LAYP(1)	HCP(1), CHV(1/4), BSC(2), BMC(1), MCD(1), CU5(1/6), TEC(1), CHEM(1), THP(1), CHF(1), VLGE(1), SHOP(1)	HCP(1), CHV(1/4), BSC(2), BMC(1), CU5(1/5), MSG(0), RELG(1), CHF(1), SHOP(1)
	<b>Method</b>	KII(1), SSI(7), FGD(2), IGD(1)	KII(3), SSI(5), FGD(1), IGD(1)	KII(3), SSI(6), FGD(1), IGD(1)	KII(1), SSI(5), FGD(1), IGD(0)
<b>Team 5</b>	<b>Source</b>	HCP(1), CHV(1/7), BSC(1), BMC(1/4), BCSC(1), CU5(1/6), TEC(1), THP(1), RELG(1), CHF(1), VLGE(1), SHOP(1)	HCP(1), CHV(1), BSC(1), BMC(1/4), BCMC(1), CU5(1/5), TEC(1), THP(1), RELG(1), LAYP(1)	HCP(1), CHV(1), BMC(1/6), CU5(1/7), THP(1), CHF(1)	HCP(1), CHV(1), BMC(1/5), BCSC(1), BCMC(1), CU5(1/6), CHEM(2), SHOP(1), LAYP(1)
	<b>Method</b>	KII(3), SSI(6), FGD(2), IGD(1)	KII(3), SSI(6), FGD(1), IGD(1)	KII(2), SSI(2), FGD(1), IGD(1)	KII(3), SSI(3), FGD(1), IGD(1)
<b>Team 6</b>	<b>Source</b>	HCP(1), CHV(1/4), BMC(1), BCSC(1), CU5(1/10), CHEM(1), THP(1), RELG(1), CHF(1), VLGE(1), SHOP(1), LAYP(1)	HCP(1), CHV(1), BSC(1), BMC(1), BCMC(1), CU5(1/6), TEC(1)	HCP(1), CHV(14), BSC(1), BMC(1), BCSC(1), BCMC(1), CU5(1/4), TEC(1), THP(1), RELG(1), CHF(1), LAYP(1)	HPM(1), HCP(1), CHV(1), BMC(1), SCD(1), MCD(2), CU5(1/6), CHEM(1), THP(0), VLGE(1), SHOP(1)
	<b>Method</b>	KII(2), SSI(8), FGD(1), IGD(1)	KII(2), SSI(4), IGD(1)	KII(2), SSI(9), IGD(1)	KII(4), SSI(4), IGD(1)
<b>Team 7</b>	<b>Source</b>	HPM(1), HCP(1), CHV(1), BSC(1), BMC(1), BCMC(1), CU5(1/5), CHEM(1), THP(1), RELG(1), SHOP(1), LAYP(1)	HCP(1), CHV(1), BSC(1), BMC(1), CU5(1/10), TEC(1), CHEM(1), THP(1), RELG(1), SHOP(1)	HCP(1), CHV(1/4), BSC(1), BMC(1), BCSC(1), BCMC(1), CU5(1/5), TEC(0), THP(1), CHF(1), LAYP(1)	HCP(1), CHV(1), BMC(1), BCMC(1), CU5(1/7), MSG(1/8)
	<b>Method</b>	KII(4), SSI(6), IGD(1)	KII(4), SSI(5), IGD(1)	KII(2), SSI(7), FGD(1), IGD(1)	KII(2), SSI(2), FGD(1), IGD(1)



## QUALITATIVE FINDINGS: Boosters and Barrier Compilation

Table 8: Listing of BOOSTERS, BARRIERS & QUESTIONS

Booster (Raise, improve, aid, add to)	Barrier (lower, hinder, reduce, block)
<b>Health Seeking Behavior</b>	
<p><b>Good health seeking behavior by the community</b></p> <ul style="list-style-type: none"> <li>Caregivers of Sick and malnourished children referred to or seek assistance from the H/Facilities</li> <li>Some Early health care seeking as indicated by the Quantitative data (<i>Health Facility Records</i>)</li> </ul> <p><b>No stigma associated with malnutrition</b></p> <ul style="list-style-type: none"> <li>Most caregivers of severely malnourished do not feel ashamed of their children or do not shy away from taking their children to the health facility</li> <li>Key community leaders confirmed that stigma associated with SAM is minimal</li> </ul>	<p><b>Poor seeking of medical assistance</b></p> <ul style="list-style-type: none"> <li>Some carers opt for home remedy and visit private clinics.</li> <li>One interviewed caregiver had no knowledge of the nutrition services provided at the Government HF,</li> <li>Some seeking assistance from Chemist shops</li> </ul> <p><b>High maternal workload</b></p> <ul style="list-style-type: none"> <li>Common in slum-like settlements based on the Somali Community socioeconomic classes; Caregivers become busy with casual or petty jobs such that they are not able to follow up treatment as required</li> <li>Most caregivers concentrate more on going to work than taking child for TCA visits</li> <li>It is challenge to follow up weekly visits for OTP program</li> </ul>
<b>Awareness about malnutrition and malnutrition signs</b>	
<p><b>Some Recognition of Malnutrition by community members as a disease</b></p> <ul style="list-style-type: none"> <li>Community members aware and can recognize signs of Severe Acute Malnutrition</li> <li>Common in areas with functional CUs and active CHVs</li> </ul> <p><b>Continued sensitization of the community on acute malnutrition</b></p> <ul style="list-style-type: none"> <li>This is majorly done in outreach sites or during important community gatherings where the community members are sensitized through Health Education</li> </ul>	<p><b>Low awareness of malnutrition signs</b></p> <ul style="list-style-type: none"> <li>Some caregivers not able to tell immediately whether a child with MAM is malnourished or not.</li> <li>Some had no knowledge of the nutrition services provided at the Government facilities</li> </ul> <p><b>Community leaders not involved in awareness creation</b></p> <ul style="list-style-type: none"> <li>Despite the influence they have in the community, Village Elders, Chiefs, Religious Leaders are not involved in creating awareness for malnutrition and signs</li> <li>Most of these key opinion persons could not tell basic information on IMAM</li> </ul>
<b>Awareness of IMAM Program and Services</b>	
<p><b>Awareness of IMAM program and services by the Community members;</b></p> <ul style="list-style-type: none"> <li>Aware of the IMAM services where children with malnutrition improved</li> </ul>	<p><b>Community members lack basic information on IMAM services</b></p> <ul style="list-style-type: none"> <li>Some of the assessed community members are not aware of basic IMAM information like eligibility criteria, ration, duration etc.;</li> </ul>
<b>Availability and Accessibility of the service</b>	





<p><b>Booster (Raise, improve, aid, add to)</b></p> <p>Availability of nearby health facilities and outreach sites in the hard-to-reach areas and far distance sites</p> <ul style="list-style-type: none"> <li>Malnourished children receiving services closer home and are really improving</li> </ul> <p>Consistent availability of RUTF stocks in the Health Facilities</p> <p>Caregivers receiving information on the basic IMAM treatment protocol</p> <ul style="list-style-type: none"> <li>Upon admission, caregivers are explained to, about the treatment protocol – why child was admitted, growth monitoring and treatment and rations</li> </ul>	<p><b>Barrier (lower, hinder, reduce, block)</b></p> <p>Some hard-to-reach areas do not have outreach sites</p> <ul style="list-style-type: none"> <li>Not all hard to reach areas are covered especially in the grazing zones for the nomadic-pastoralist communities</li> </ul> <p>Inadequate staff to support outreach activities and routine H/F services concurrently</p> <ul style="list-style-type: none"> <li>Most of the dispensaries have one staff hence not consistently available to support link outreach activities</li> </ul> <p>Lack of essential medicine at H/F and outreaches</p> <ul style="list-style-type: none"> <li>This has contributed to low community attendance hence defaulting of some IMAM beneficiaries</li> </ul> <p>Impassable roads</p> <ul style="list-style-type: none"> <li>Caregivers are unable to come to the clinic hence some of the children end up improving outside the program.</li> </ul> <p>Long distance to the Service deliver points</p> <ul style="list-style-type: none"> <li>Long trekking distance to the SDP necessitated by outward migration</li> </ul> <p>Migration among nomadic pastoralist</p> <ul style="list-style-type: none"> <li>Most of IMAM defaulters were nomadic pastoralist who migrate without notifying the H/F</li> </ul> <p>Misuse of RUTF</p> <ul style="list-style-type: none"> <li>Sharing of commodities and selling of RUTF/RUSF</li> </ul> <p>Health facility closed</p> <ul style="list-style-type: none"> <li>Discourages caregivers who have walked for long distances to come for the services and results to defaulting</li> </ul>
<p><b>Case identification, enrolment, Referral, Transfer and follow up strategy</b></p>	
<p>Regular screening and monitoring for malnutrition by CHVs</p> <p>Family MUAC approach in use by caregivers contributing to Self-referral of SAM and MAM cases</p> <p>Early identification of malnutrition cases at all levels</p> <p>Engagement of CHVs and CHEWs in community mobilization</p> <p>Some CHVs are active and do case-finding</p> <ul style="list-style-type: none"> <li>In areas with active CUs CHVs do case-finding, referral and follow up</li> </ul> <p>Beneficiaries adherence to IMAM treatment protocol</p>	<p>Lack of follow up of cases in IMAM program</p> <ul style="list-style-type: none"> <li>CHVs not doing household visits and client follow up due to long distance and workload to cover</li> </ul> <p>Minimal screening and referral of malnourished cases by CHVs</p> <ul style="list-style-type: none"> <li>Common in catchment populations with inactive CUs and CHVs</li> <li>The CHVs do not conduct regular screening for malnutrition due to long distance and workload to cover</li> </ul> <p>Many inactive CHVs who are not motivated</p> <p>Wrong/negative reaction of some caregivers upon rejection after wrong referrals by CHVs</p>
<p><b>Health facility-Community communication System</b></p>	
<ul style="list-style-type: none"> <li>A communication platform (e.g. Whats-app) is in place for sharing information</li> <li>Regular CHVs review meetings</li> </ul> <p>Availability and use of referral slip</p> <ul style="list-style-type: none"> <li>patients referred to SC are transported by ambulance and normally comes back with slips for follow ups</li> </ul> <p>Regular (quarterly) Supportive supervision from the district (S/CHMT);</p> <ul style="list-style-type: none"> <li>SCHMTs visit the facility on monthly basis and was here the past week for support on commodities and reporting.</li> </ul>	<p>Nutritionists and other HCPs not involved in CHVs review meetings</p> <p>Nutrition program agenda not part of discussion in the CHVs review meetings</p> <p>Lack of referral slips:</p> <ul style="list-style-type: none"> <li>Most referrals had no proof/slip to show that they were referred by CHV</li> </ul> <p>Lack of feedback to CHVs from the H/F upon referral of malnourished cases or traced defaulters</p>
<p><b>Appreciation of IMAM Service</b></p>	
<p>Great appreciation of IMAM services by the community</p> <ul style="list-style-type: none"> <li>A good program which saves children's lives</li> <li>Carers of cured cases confessing that the health of their</li> </ul>	<p>Poor perception of IMAM program; RUTF/RUSF causes diarrhea</p> <ul style="list-style-type: none"> <li>Some cases confirmed to be discharged too early before</li> </ul>



<b>Booster (Raise, improve, aid, add to)</b> children improved upon admission into IMAM program <b>Recognition of CHVs for their work by the community</b>	<b>Barrier (lower, hinder, reduce, block)</b> getting cured causing relapses
<b>Client Retention Strategy</b>	
<b>Existence of CHS for referral and defaulter tracing mechanisms</b> <ul style="list-style-type: none"> <li>Some defaulter tracing happening</li> </ul>	<b>Lack of defaulter tracing strategy for the nomadic pastoralist communities</b> <ul style="list-style-type: none"> <li>IMAM Absentees and defaulters never followed up</li> <li>H/F does not have a defaulter tracing mechanism</li> </ul>
<b>Capacity of the Service Delivery Point to provide a quality service</b>	
<b>Implementation of IMAM services throughout the week</b> <ul style="list-style-type: none"> <li>Contributing to flexibility in service delivery</li> </ul> <b>Availability of trained and experienced staff on IMAM treatment protocols</b> <ul style="list-style-type: none"> <li>Have received classroom training and some have been sensitized through OJT</li> </ul> <b>Regular OJDT and sensitization of CHVs and HCPs</b> <b>Regular (monthly) data reviewing and meeting at sub county level for H/F in-charges</b> <b>Operational H/Fs in the County offering IMAM services</b> <b>Good program outcome (above threshold recovery rates)</b>	<b>Inadequate Health Care Workers especially the H/Fs in the most rural areas</b> <b>Newly employed HCPs not trained on IMAM</b> <b>High workload for the facility HCP</b> <ul style="list-style-type: none"> <li>Unavailability of nutritionist in high volume health facilities</li> <li>High no. of patients as compared to the corresponding staff.</li> </ul> <b>Inadequate Anthropometric tools: Faulty weighing scales &amp; height boards and lack of MUAC tools</b> <b>Poor documentation</b> <ul style="list-style-type: none"> <li>Registers/forms not up-to-date in most of the H/Fs</li> </ul> <b>Long queues and longer waiting time during distribution days</b>



## STAGE TWO: CONFIRMING AREAS OF HIGH AND LOW IMAM COVERAGE

### Hypotheses Formulation and Testing

#### Hypothesis Formulation

##### ***Hypothesis Formulating***

This was done using evidence collected and analyzed in Stage One. During Stage One of Garissa SQUEAC assessment, the evidence collected and analyzed through community assessment indicated that cases identification, referral into IMAM program, enrolment and follow up of cases, and retention in IMAM program till they exit as cured were found to majorly impact IMAM coverage in Garissa County.

##### **Setting the Parameters of the Hypothesis:**

Garissa team observed that maternal workload had more impact on the exit outcomes for IMAM program and therefore, agreed on the following parameters;

- “Areas associated with High maternal workload” where caregivers are engaged in petty trades or sale of services (sale of *miraa*, sale of milk, laundry services or charcoal burning etc.), besides the usual household chores, and have to be away from home for most part of their day. These are slum like settlements and there is little or no active follow up of IMAM clients by CHVs.
- “Areas associated with Low maternal workload” where caregivers are engaged with the usual household chores, and are not away from their children for long. These are village like settlements with some active case finding and follow up of IMAM clients by CHVs.

The following hypothesis was formulated;

Hypothesis 1: “Coverage for SAM and MAM is higher than 50% in areas associated with low maternal workload while coverage for SAM and MAM is lower than 50% in areas associated with high maternal workload.”

**Rationale for the Hypothesis:**

In areas of low coverage,

- High maternal workload require caregivers to be away from home for most part of her day. The social class system in Garissa results to families with similar social economic activities to live within the same geographical areas.
- Common in slum-like settlements based on the Somali Community socioeconomic classes; Caregivers become busy with casual or petty jobs such that they are not able to follow up treatment as required
- Most caregivers concentrate more on going to work than taking child for TCA visits
- It is a challenge for the busy caregivers to follow up weekly and bi-weekly visits for OTP and SFP programs respectively
- These low coverage areas are associated with high defaulting rates, absenteeism and long lengths of stay in program

**Hypothesis Testing and Verification**

**Testing done** using simplified LQAS, formula  $d = \lceil n \cdot p \rceil$  in comparison with 50% threshold set as the best possible coverage for IMAM program in Garissa, agreed upon by the SQUEAC Survey analysts.

$$d = \lceil n \cdot p \rceil$$

Where:

- d = threshold value (round down)
- n = sample size
- p = standard set (50%)

**Small area survey:** conducted in ten (10) purposively selected villages; five (5) villages within CUs with active family MUAC activities and five (5) villages in areas without. The data collection teams were split into two, five teams covered the villages perceived to be of high IMAM coverage and the other five covered areas perceived to be of low IMAM coverage. The teams were fully trained and issued with appropriate assessment tools to carry out the small area survey. Once in the villages, the teams conducted exhaustive house-to-house screening of all children 6 to 59 months, to locate all SAM and MAM cases to determine if they were covered SAM/MAM cases (Cin), non-covered SAM/MAM cases (Cout) and recovering SAM/MAM cases (Rin).

*Small Area Survey Findings*

#	CLUSTER	TOTAL SAM Cases	SAM Cases in OTP	SAM Cases not in OTP	SAM Recovering	Total MAM Cases	MAM Cases in OTP	MAM Cases not in OTP	MAM Recovering	TOTAL Screened (IMAM)
1	MODIKA	2	1	1	1	3	1	2	0	39
2	BAKUYU	2	2	0	0	8	6	2	1	46
3	DEKA BURET	1	0	1	0	6	3	3	1	58
4	MLIMANI	0	0	0	0	5	2	3	0	53
5	BURBURIS	0	0	0	0	6	4	2	0	44

#	CLUSTER	TOTAL SAM Cases	SAM Cases in OTP	SAM Cases not in OTP	SAM Recovering	Total MAM Cases	MAM Cases in OTP	MAM Cases not in OTP	MAM Recovering	TOTAL Screened (IMAM)
6	BULA MZURI	4	2	2	1	13	4	9	4	59
7	BULA KAMOR	1	0	1	0	4	0	4	0	42
8	BULA PUNDA	1	0	1	0	5	1	4	1	50
9	BULA VUMBI	3	0	3	0	7	1	6	0	63
10	BULA GESTO	0	0	0	0	5	2	3	0	43
	<b>TOTAL</b>	<b>14</b>	<b>5</b>	<b>9</b>	<b>2</b>	<b>62</b>	<b>24</b>	<b>38</b>	<b>7</b>	<b>497</b>

**Analysis of the Small Area Survey results using LQAS**

The small area survey results were analyzed using the LQAS method to establish if they had confirmed or denied their hypotheses. For each set of results, the decision rule (d) was calculated and compared with Cin. The calculation for d:

$$d = \lceil n \times p / 100 \rceil;$$

n = sample size

p = coverage standard (50%)

If the number of covered cases (Cin) found exceeded a threshold value (d) then coverage was classified as being *satisfactory*; coverage exceeded the standard.

If the number of covered cases (Cin) found equals or is less than a threshold value (d) then coverage was classified as being *unsatisfactory*; coverage does not exceed the standard.

Table 9: Small Area Findings - SAM

RESULTS	Coverage should be high (Village/Community)		Coverage should be low (Village/Community)	
	MODIKA		BULA MZURI	
SAM cases found =	2		4	
SAM cases covered =	1		2	
	BAKUYU		BULA KAMOR	
SAM cases found =	2		1	
SAM cases covered =	2		0	
	DEKA BURET		BULA PUNDA	
SAM cases found =	1		1	
SAM cases covered =	0		0	
	MLIMANI		BULA VUMBI	
SAM cases found =	0		3	
SAM cases covered =	0		0	
	BURBURIS		BULA GESTO	
SAM cases found =	0		0	
SAM cases covered =	0		0	
<b>DEDUCTIONS FOR SAM COVERAGE HYPOTHESIS</b>				
Coverage standard (p)	50%	50%	Coverage should be high Village / Community	Coverage should be low Village / Community
Total SAM cases found (n) =	5	9	3>2	Hypothesis validated
Total SAM cases covered =	3	2		
Decision rule (d) =	2	4		

Table 10: Small Area Findings - MAM

RESULTS	Coverage should be high (Village/Community)		Coverage should be low (Village/Community)	
	MODIKA		BULA MZURI	
MAM cases found =	3		13	
MAM cases covered =	1		4	
	BAKUYU		BULA KAMOR	
MAM cases found =	8		4	
MAM cases covered =	6		0	
	DEKA BURET		BULA PUNDA	
MAM cases found =	6		5	
MAM cases covered =	3		1	
	MLIMANI		BULA VUMBI	
MAM cases found =	5		7	
MAM cases covered =	2		1	
	BURBURIS		BULA GESTO	
MAM cases found =	6		5	
MAM cases covered =	4		2	
<b>DEDUCTIONS FOR MAM COVERAGE HYPOTHESIS</b>				
Coverage standard (p)	50%	50%		
Total MAM cases found (n) =	28	34	Coverage should be high Village / Community	
Total MAM cases covered =	16	8	16 > 14	Hypothesis validated
Decision rule (d) =	14	17	8 < 17	Hypothesis validated

The **Hypothesis** “Coverage for SAM and MAM is higher than 50% in areas associated with low maternal workload while coverage for SAM and MAM is lower than 50% in areas associated with high maternal workload.” was **confirmed**. This confirmed that the **barrier of maternal workload** had an impact on IMAM coverage in Garissa County.

### Small Area Findings on Coverage

An analysis of the qualitative data collected during the small area survey indicated the following;

- Identification by Health workers and CHVs, and recognition of malnutrition by caregivers were the main reasons for being in program.
- Not aware that the child is malnourished, distance to the health facility and caregivers being too busy were the main reasons why some children identified as malnourished were not in program.

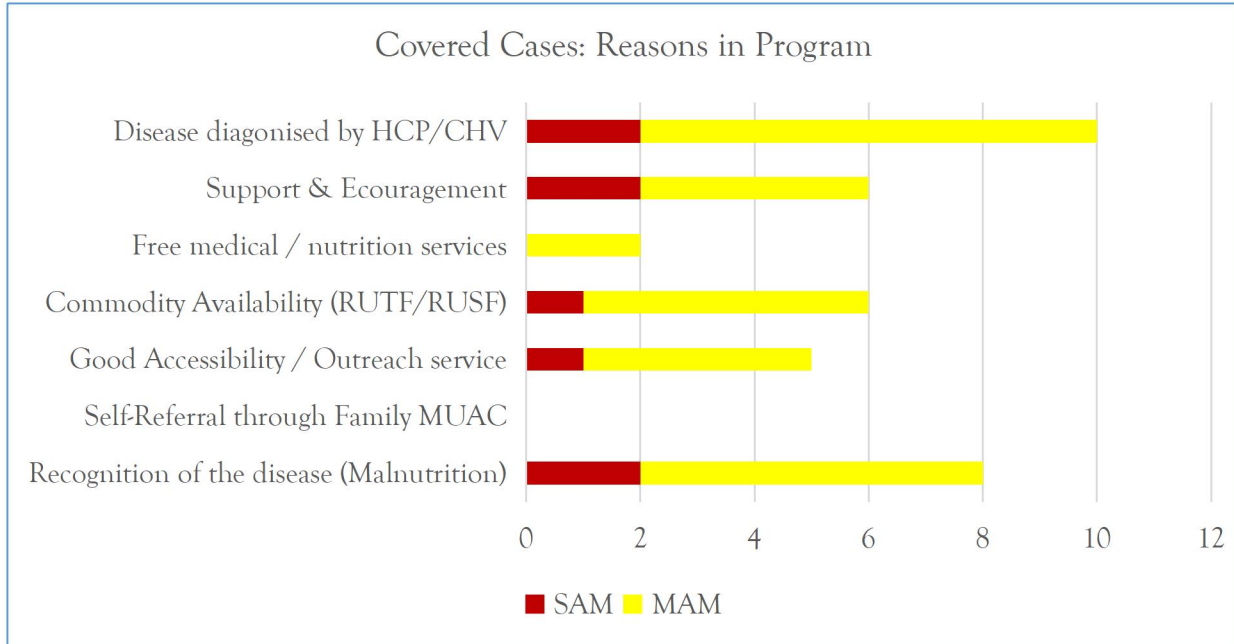


Figure 115: Reason covered cases are admitted in IMAM program

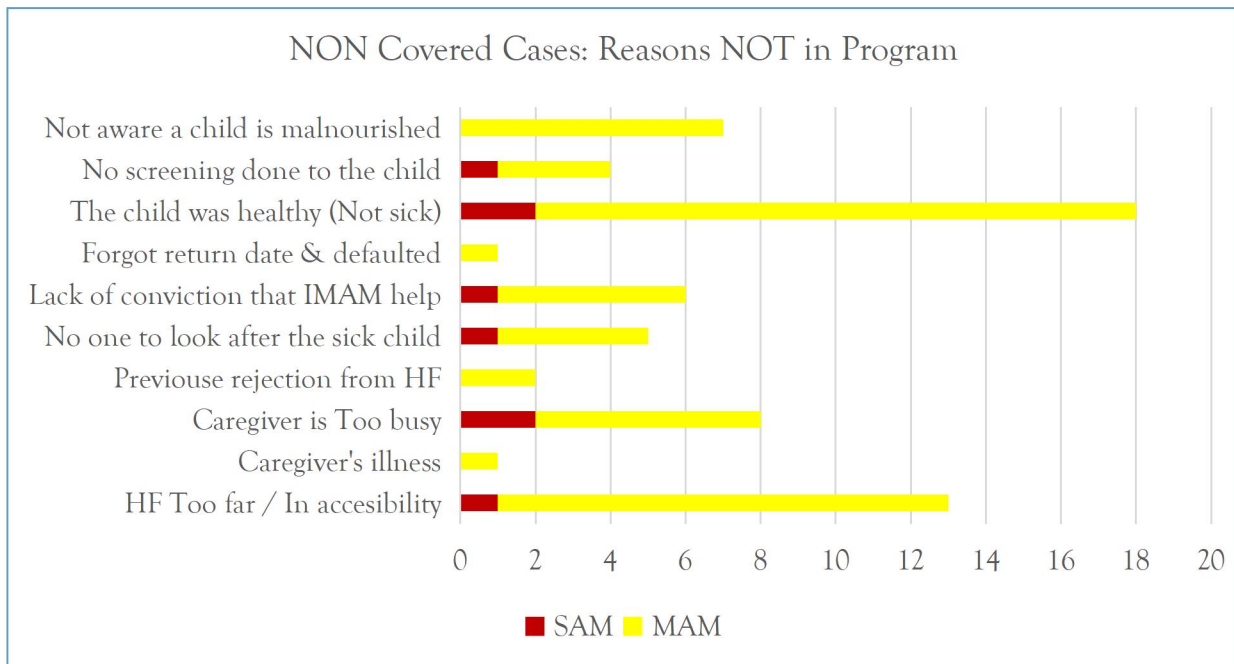


Figure 116: Reasons non- covered cases are not admitted in IMAM program

## PRIOR DEVELOPMENT

### PRIOR contributing Elements

#### The PRIOR was Derived from;

1. **Simple barriers & boosters:** Listing of Boosters and Barriers arising/derived from triangulated evidence in Stage One



2. **Weighted Barriers & Boosters:** Weights of Booster and Barriers derived from well-triangulated evidence in stages 1 and 2
3. **Histogram:** software generated with Credible coverage limits derived from triangulated evidence by four (4) analysis teams, each giving an estimate of what they believed IMAM coverage for Tana River should be.
4. **Concept Notes:** Listing of the positive and negative contributors to IMAM coverage

### Simple and Weighted Boosters and Barriers: Average of Boosters and Barriers

Table 11: Legends for Qualitative Information sources and methods

KEY	SOURCE	KEY	METHOD
*	Caregivers of SAM/MAM Beneficiaries	SSI	Semi-Structured Interview
※	Facility In-charge / Nurse In-charge / Nutritionist	KII	Key Informant Interview
Δ	Community Health Worker / Volunteer	IGD	Informal Group Discussion
△	Health related Programme Manager / Others	FGD	Focus Group Discussion
∑	Area Chief (Administrative leader)	OBS	Observation
∏	School Teacher		
σ	Small study		
∅	caregiver of a cured SAM/MAM case		
*	caregiver of SAM/MAM case in program		
α	Caregivers of OTP/SFP Defaulted Clients		
∞	Caregivers of under 5 / women		
Ω	Service Delivery Point (Facility) Data Extracts / Observation		
√	Traditional Healing Practitioner / TBA		
=	Layperson		
∩	Village Elder		
e	Health Facility Observation Checklist		
¥	Shop attendance		
Y	Chemist/Pharmacy Attendant		
Ġ	Religious leaders		
P	Inspector/Chief/sub-chief		
ł	MtMSG		





Boosters and Barrier Compilation

Table 12: Simple and Weighted Boosters and Barrier for OTP Program

#	Booster (Raise, improve, aid, add to)	Source	Method	wt %	#	Barrier (lower, hinder, reduce, block)	Source	Method	wt %
Booster range of weighting		0 - 3.7			Barrier range of weighting		0 - 3.5		
<b>Health Seeking Behavior</b>									
1	Good health seeking behavior by the community; Sick are referred to hospital and some early health seeker	※(15), Ø(6), Ğ(2), Δ(5), =(2), Ⓚ(1)	KII(20), SSI(4), FGD(1), IGD(2)	2.4	1	Poor seeking of medical assistance; some opt home remedy, chemist or private clinics	※(5), Ø(2), Δ(5), √(5), Y(2)	KII(5), SSI(5), FGD(1), IGD(1)	1.5
2	No stigma associated with malnutrition	Ğ(3), Δ(16), =(2), Ⓚ(1), *(5), √(2), ¶(1)	KII(4), SSI(4), FGD(3), IGD(1)	2.5	2	High maternal workload; common in slam like settlement, leading to limited time for child care	Δ(4), ※(15), Ø(6), Ğ(3), Δ(10), *(4), ρ(5), ¶(1)	KII(20), SSI(4), FGD(2), IGD(2)	3.0
<b>Awareness about malnutrition and malnutrition signs</b>									
3	Some Recognition of Malnutrition by community members as a disease; can recognize signs of Severe Acute Malnutrition	Ğ(2), ¶(3), =(2), P(3), *(5)	SSI(8), FGD(3)	2.4	3	Community leaders not involved in awareness creation; underutilized influencing opportunity	Ğ(7), ¶(2), =(8), P(4)	SSI(4), FGD(2), IGD(2)	1.7
4	Continued sensitization of acute malnutrition to the community members through Health Education	Ğ(2), ¶(3), =(2), P(3), *(6)	SSI(8), FGD(4)	1.8					
<b>Awareness of IMAM Program and Services</b>									
5	Awareness of IMAM program and services by the Community members; IMAM treat malnutrition	※(10), Ø(2), Ğ(1), Δ(5)	KII(10), SSI(2), FGD(1)	1.5	4	Community members lack basic information on IMAM services like eligibility criteria, ration, duration etc.	※(5), Ğ(2), Δ(15), =(1), P(3), √(2)	KII(10), SSI(4), FGD(2), IGD(2)	1.9
#	Booster (Raise, improve, aid, add to)	Source	Method	wt %	#	Barrier (lower, hinder, reduce, block)	Source	Method	wt %
Booster range of weighting		0 - 3.7			Barrier range of weighting		0 - 3.5		
<b>Availability and Accessibility of the service</b>									
					10	Migration among nomadic pastoralist interrupts follow up of treatment to completion; resulting to high defaulting	Δ(1), ※(5), Ø(4), Δ(6), *(3), Ğ(1)	KII(10), SSI(4), FGD(2)	3.3
					11	Misuse of nutrition commodities; sharing and selling of RUTE/RUSF	Δ(1), ※(15), Ø(6), Δ(25), *(1), ρ(3), ¶(1), ¥(1)	KII(10), SSI(4), FGD(2), IGD(2)	2.3
					12	Health facility closed sometimes discouraging caregivers who have walked for long distances	Δ(5), *(2), ρ(2)	KII(5), FGD(1)	1.0
<b>Case identification/enrolment/Referral/Transfer/follow up strategy</b>									



#	Booster (Raise, improve, aid, add to)	Source	Method	wt %	#	Barrier (lower, hinder, reduce, block)	Source	Method	wt %
9	Regular screening and monitoring for malnutrition by CHVs	Δ(2), ※(20), ∞(2), Δ(15), * (3), ρ(2)	KII(14), SSI(2), FGD(2), IGD(2)	2.0	13	Lack of follow up of cases in IMAM program; referral or absenteeism cases	∅(6), ρ(3), * (1), ∞(3)	KII(10), SSI(4), FGD(2), IGD(2)	2.3
10	Family MUAC approach in use by caregivers contributing to Self-referral of SAM and SAM cases	Δ(1), ※(10), ∞(2), * (3)	KII(12), FGD(1)	0.5	14	Minimal screening and referral of malnourished cases by CHVs; common in in-active CU, irregular screening	※(15), ∅(6), Δ(25), * (1), ρ(3), ∏(1), ¥(1)	KII(25), SSI(4), FGD(4), IGD(4)	2.5
11	Early identification of malnutrition cases at all levels	Δ(2), ※(25), Δ(17)	KII(26), FGD(3)	2.5	15	High number of inactive CHVs; most are not motivated	※(15), Δ(25), Ğ(3), ∩(3), Υ(0)	KII(10), SSI(4), FGD(2)	3.0
12	Engagement of CHVs and CHEWs in community mobilization	Δ(2), ※(15), Δ(20)	KII(22), FGD(3)	0.5					
13	Some CHVs are active; do case-finding, referral and follow-up	Δ(2), ※(10), ∞(20), Δ(5), * (6)	KII(14), SSI(2), IGD(2)	1.5					
14	Beneficiaries adherence to SAM treatment protocol; TCA	※(10), ∞(6), Δ(5)	KII(14), SSI(2)	2.3					
<b>Health facility- Community communication System</b>									
15	A communication platform (e.g. Whats-app) is in place for sharing information	Δ(2), ※(10), Δ(5)	KII(14), SSI(2)	1.5	16	Nutritionists and other HCPs not involved in CHVs review meetings	※(5), Δ(6)	KII(5), FGD(2)	3.0
16	Regular CHVs review meetings conducted (Undocumented)	※(15), Δ(16)	KII(14), FGD(2)	1.0	17	Nutrition program agenda not part of discussion in the CHVs review meetings	※(5), Δ(6)	KII(5), FGD(1)	1.5
17	Availability and use of referral slip; referral from community, HF & SC	※(15), Δ(10)	KII(10), OBS(4), IGD(1)	1.9	18	Lack of referral slips: Most community referrals lack slips	※(5), Δ(6)	KII(5), FGD(1)	1.0
18	Regular (quarterly) Supportive supervision from the sub-county (S/CHMT);	Δ(2), ※(26)	KII(26), FGD(1)	1.0	19	Lack of feedback to CHVs from the H/F upon referral of malnourished cases or traced defaulters	Δ(6)	KII(6)	2.0
<b>Appreciation of OTP Service</b>									
19	Great appreciation of IMAM services by the community: IMAM saves life and improve health	∞(20), Δ(18), * (6), ∅(6)	KII(4), SSI(2), FGD0, IGD(2)	2.8	20	Poor perception of IMAM program; RUTF causes diarrhea	∞(2), Δ(8), * (6), ∅(5)	KII(5), SSI(2), FGD(1)	1.6
20	Recognition of CHVs for their work by the community	Δ(1), ※(18), ∞(10), Δ(13), * (6)	KII(10), SSI(2), FGD(4), IGD(1)	1.0					
#	Booster (Raise, improve, aid, add to)	Source	Method	wt %	#	Barrier (lower, hinder, reduce, block)	Source	Method	wt %
	<b>Booster range of weighting</b>	0 - 3.7				<b>Barrier range of weighting</b>	0 - 3.5		
<b>Client Retention Strategy</b>									
21	Existence of CHS for referral and defaulter tracing mechanisms	Δ(3), ※(6), Δ(3)	KII(14), IGD(2)	1.0	21	Lack of defaulter tracing strategy for the nomadic pastoralist communities; no	※(8), ∞(10),	KII(5), SSI(2), FGD(1)	3.0



#	Booster (Raise, improve, aid, add to)	Source	Method	wt %	#	Barrier (lower, hinder, reduce, block)	Source	Method	wt %
						follow up no defaulter tracing system	Δ(4), *(4)		
					22	Long queues and longer waiting time during distribution days	Δ(1), Δ(3)	KII(4)	0.5
<b>Capacity of the Service Delivery Point to provide a quality service</b>									
22	Implementation of IMAM services throughout the week; every day is a distribution day	※(15), ∞(10), Δ(3), *(5)	KII(15), FGD(2), IGD(2)	1.5	23	Inadequate Health Care Workers especially the H/Fs in the most rural areas	Δ(4)	KII(4)	0.5
23	Availability of trained and experienced staff on IMAM treatment protocols	Δ(3), ※(4)	KII(15), FGD(2)	2.3	24	Newly employed HCPs not trained on IMAM	Δ(1), Δ(8)	KII(9)	1.0
24	Regular On-Job Training and sensitization of CHVs and HCPs	Δ(3), ※(6)	KII(15), FGD(2)	1.0	25	High workload for the facility HCP; not nutritionist in high volume facilities, inadequate staff	※(12), ∞(10), Δ(14), *(5)	KII(10), SSI(4), FGD(2), IGD(2)	2.0
25	Regular (monthly) data reviewing and meeting at sub county level for H/F in-charges	Δ(2), ※(4)	KII(15), FGD(2)	1.0	26	Inadequate Anthropometric tools: Faulty weighing scales & height boards and lack of MUAC tools	※(2), Δ(4)	KII(6)	0.5
26	Operational H/Fs in the County offering IMAM services	Δ(3), ※(8), Δ(13), *(15)	KII(11), FGD(2), IGD(2)	3.0	27	Poor documentation; incomplete registers, client receiving services without documentation	Ω(30), ※(6), Δ(4)	OBS(1), FGD(2), KII(6)	3.3
27	Good program outcome (above threshold recovery rates)	Δ(3), ※(16)	KII(19)	2.0	28	Discrepancy on program performance outcome between routine data and KHIS reports	Ω(50)	OBS(50)	1.0
<b>Total Booster weighted</b>			<b>48.5</b>		<b>Total Barrier weighted</b>			<b>52.2</b>	
<b>Total Booster without weight</b>			<b>27.0</b>		<b>Total Barrier without weight</b>			<b>28.0</b>	

Booster and Barriers – SFP

Table 13: Simple and Weighted Boosters and Barrier for SFP Program

#	Booster (Raise, improve, aid, add to)	Source	Method	wt %	#	Barrier (lower, hinder, reduce, block)	Source	Method	wt %
<b>Booster range of weighting</b>		<b>0 - 3.7</b>			<b>Barrier range of weighting</b>		<b>0 - 3.3</b>		
<b>Health Seeking Behavior</b>									
1	Good health seeking behavior by the community; Sick are referred to hospital and some early health seeker	※(15), ∅(6), Ğ(2), Δ(5), =(2), Ъ(1)	KII(20), SSI(4), FGD(1), IGD(2)	2.4	1	Poor seeking of medical assistance; some opt home remedy, chemist or private clinics	※(5), ∅(2), Δ(5), √(5), Y(2)	KII(5), SSI(5), FGD(1), IGD(1)	1.5
2	No stigma associated with malnutrition	Ĝ(3), Δ(16), =(2),	KII(4),	2.5	2	High maternal workload; common in	Δ(4), ※(15), ∅(6),	KII(20),	3.0



#	Booster (Raise, improve, aid, add to)	Source	Method	wt %	#	Barrier (lower, hinder, reduce, block)	Source	Method	wt %
		Ɣ(1), *(5), √(2), ∏(1)	SSI(4), FGD(3), IGD(1)			slum like settlement, leading to limited time for child care	Ĝ(3), Δ(10), *(4), ρ(5), ∏(1)	SSI(4), FGD(2), IGD(2)	
<b>Awareness about malnutrition and malnutrition signs</b>									
3	Some Recognition of Malnutrition by community members as a disease; can recognize signs of Severe Acute Malnutrition	Ĝ(2), ∩(3), =(2), P(3), *(5)	SSI(8), FGD(3)	2.4	3	Low awareness of malnutrition signs; not aware of early signs of malnutrition	Δ(16), Ɣ(4), *(5), ∞(5)	KII(16), SSI(4), IGD(2)	1.2
4	Continued sensitization of acute malnutrition to the community members through Health Education	Ĝ(2), ∩(3), =(2), P(3), *(6)	SSI(8), FGD(4)	1.8	4	Community leaders not involved in awareness creation; unutilized influence opportunity	Ĝ(7), ∩(2), =(8), P(4)	SSI(4), FGD(2), IGD(2)	1.7
<b>Awareness of IMAM Program and Services</b>									
5	Awareness of IMAM program and services by the Community members; IMAM treat malnutrition	※(10), Ø(2), Ĝ(1), Δ(5)	KII(10), SSI(2), FGD(1)	1.5	5	Community members lack basic information on IMAM services like eligibility criteria, ration, duration etc.	※(5), Ĝ(2), Δ(15), =(1), P(3), √(2)	KII(10), SSI(4), FGD(2), IGD(2)	1.9
<b>Availability and Accessibility of the service</b>									
6	Availability of nearby health facilities and outreach sites in the hard-to-reach areas and far distance sites; health and nutrition services closer to home	Δ(1), ※(25), Ø(6), Ĝ(2), Δ(15), *(1), ρ(3), ∏(1)	KII(24), SSI(8), FGD(1), IGD(1)	3.3	6	Some hard-to-reach areas do not have outreach sites	Δ(1), ※(5), Ĝ(2), Δ(5), ρ(3)	KII(10), SSI(4), IGD(2)	2.0
7	Consistent availability of RUSF stocks in the Health Facilities	※(26), Ø(4), Ĝ(2), Δ(16), *(9), Ω(1)	KII(14), SSI(2), FGD(2), IGD(2)	2.3	7	Inadequate staff to support outreach activities and routine H/F services concurrently	※(15), Δ(5)	KII(10), FGD(2)	1.2
8	Caregivers receiving information on the basic IMAM treatment protocol	※(21), Ø(4), Δ(16), *(10)	KII(10), SSI(2), FGD(2)	2.0	8	Lack of essential medicine at H/F and outreaches	※(15), Δ(6), ∞(4)	KII(10), FGD(2), IGD(2)	3.0
					9	Impassable roads due to insecurity or floods	Ω(1), ρ(5)	OBS(1), FGD(2)	0.8
					10	Long distance to the Service deliver points; out-ward migration impact	※(2), Ø(4), Δ(6), *(3)	KII(10), FGD(2)	1.8



#	Booster (Raise, improve, aid, add to)	Source	Method	wt %	#	Barrier (lower, hinder, reduce, block)	Source	Method	wt %
					11	Migration among nomadic pastoralist interrupts follow up of treatment to completion; resulting to high defaulting rates	$\Delta(1), \times(5), \emptyset(4), \Delta(6), *(3), \checkmark(1)$	KII(10), SSI(4), FGD(2)	3.3
					12	Misuse of nutrition commodities; sharing and selling of RUSF	$\Delta(1), \times(15), \emptyset(6), \Delta(25), *(1), \varnothing(3), \Pi(1), \Upsilon(1)$	KII(10), SSI(4), FGD(2), IGD(2)	2.3
					13	Health facility closed sometimes discouraging caregivers who have walked for long distances	$\Delta(5), *(2), \varnothing(2)$	KII(5), FGD(1)	1.0
<b>Case identification/enrolment/Referral/Transfer/follow up strategy</b>									
9	Regular screening and monitoring for malnutrition by CHVs	$\Delta(2), \times(20), \infty(2), \Delta(15), *(3), \varnothing(2)$	KII(14), SSI(2), FGD(2), IGD(2)	2.0	14	Lack of follow up of cases in IMAM program; referral or absenteeism cases	$\emptyset(6), \varnothing(3), *(1), \infty(3)$	KII(10), SSI(4), FGD(2), IGD(2)	2.3
10	Family MUAC approach in use by caregivers contributing to Self-referral of MAM cases	$\Delta(1), \times(10), \infty(2), *(3)$	KII(12), FGD(1)	0.5	15	Minimal screening and referral of malnourished cases by CHVs; common in in-active CU, irregular screening	$\times(15), \emptyset(6), \Delta(25), *(1), \varnothing(3), \Pi(1), \Upsilon(1)$	KII(25), SSI(4), FGD(4), IGD(4)	2.5
11	Early identification of malnutrition cases at all levels	$\Delta(2), \times(25), \Delta(17)$	KII(26), FGD(3)	2.5	16	High number of inactive CHVs; most are not motivated	$\times(15), \Delta(25), \checkmark(3), \mathbb{W}(3), \Upsilon(0)$	KII(10), SSI(4), FGD(2)	3.0
12	Engagement of CHVs and CHEWs in community mobilization	$\Delta(2), \times(15), \Delta(20)$	KII(22), FGD(3)	0.5	17	Wrong/negative reaction of some caregivers upon rejection after wrong referrals by CHVs	$\times(15), \Delta(25)$	KII(15), FGD(2)	1.0
13	Some CHVs are active; do case-finding, referral and follow-up	$\Delta(2), \times(10), \infty(20), \Delta(5), *(6)$	KII(14), SSI(2), IGD(2)	1.5					
14	Beneficiaries adherence to IMAM treatment protocol; TCA	$\times(10), \infty(6), \Delta(5)$	KII(14), SSI(2)	2.3					
<b>Health facility-Community communication System</b>									



#	Booster (Raise, improve, aid, add to)	Source	Method	wt %	#	Barrier (lower, hinder, reduce, block)	Source	Method	wt %
15	A communication platform (e.g. WhatsApp) is in place for sharing information	Δ(2), ※(10), Δ(5)	KII(14), SSI(2)	1.5	18	Nutritionists and other HCPs not involved in CHVs review meetings	※(5), Δ(6)	KII(5), FGD(2)	3.0
16	Regular CHVs review meetings conducted (Undocumented)	※(15), Δ(16)	KII(14), FGD(2)	1.0	19	Nutrition program agenda not part of discussion in the CHVs review meetings	※(5), Δ(6)	KII(5), FGD(1)	1.5
17	Availability and use of referral slip; referral from community, HF & SC	※(15), Δ(10)	KII(10), OBS(4), IGD(1)	1.9	20	Lack of referral slips: Most community referrals lack slips	※(5), Δ(6)	KII(5), FGD(1)	1.0
18	Regular (quarterly) Supportive supervision from the sub-county (S/CHMT);	Δ(2), ※(26)	KII(26), FGD(1)	1.0	21	Lack of feedback to CHVs from the H/F upon referral of malnourished cases or traced defaulters	Δ(6)	KII(6)	2.0
<b>Appreciation of SFP Service</b>									
19	Great appreciation of IMAM services by the community: IMAM saves life and improve health	∞(20), Δ(18), * (6), Ø(6)	KII(4), SSI(2), FGD(0), IGD(2)	2.8	22	Poor perception of IMAM program; RUTF/RUSF causes diarrhea	∞(2), Δ(8), * (6), Ø(5)	KII(5), SSI(2), FGD(1)	1.6
20	Recognition of CHVs for their work by the community	Δ(1), ※(18), ∞(10), Δ(13), * (6)	KII(10), SSI(2), FGD(4), IGD(1)	1.0					
<b>Client Retention Strategy</b>									
21	Existence of CHS for referral and defaulter tracing mechanisms	Δ(3), ※(6), Δ(3)	KII(14), IGD(2)	1.0	23	Lack of defaulter tracing strategy for the nomadic pastoralist communities; no follow up no defaulter tracing system	※(8), ∞(10), Δ(4), * (4)	KII(5), SSI(2), FGD(1)	3.0
					24	Long queues and longer waiting time during distribution days	Δ(1), Δ(3)	KII(4)	0.5
<b>Capacity of the Service Delivery Point to provide a quality service</b>									
22	Implementation of IMAM services throughout the week; every day is a distribution day	※(15), ∞(10), Δ(3), * (5)	KII(15), FGD(2), IGD(2)	1.5	25	Inadequate Health Care Workers especially the H/Fs in the most rural areas	Δ(4)	KII(4)	0.5



#	Booster (Raise, improve, aid, add to)	Source	Method	wt %	#	Barrier (lower, hinder, reduce, block)	Source	Method	wt %
23	Availability of trained and experienced staff on IMAM treatment protocols	Δ(3), ※(4)	KII(15), FGD(2)	2.3	26	Newly employed HCPs not trained on IMAM	Δ(1), Δ(8)	KII(9)	1.0
24	Regular On-Job Training and sensitization of CHVs and HCPs	Δ(3), ※(6)	KII(15), FGD(2)	1.0	27	High workload for the facility HCP; not nutritionist in high volume facilities, inadequate staff	※(12), ∞(10), Δ(14), *(5)	KII(10), SSI(4), FGD(2), IGD(2)	2.0
25	Regular (monthly) data reviewing and meeting at sub county level for H/F in-charges	Δ(2), ※(4)	KII(15), FGD(2)	1.0	28	Inadequate Anthropometric tools: Faulty weighing scales & height boards and lack of MUAC tools	※(2), Δ(4)	KII(6)	0.5
26	Operational H/Fs in the County offering IMAM services	Δ(3), ※(8), Δ(13), *(15)	KII(11), FGD(2), IGD(2)	3.0	29	Poor documentation; incomplete registers, client receiving services without documentation	Ω(30), ※(6), Δ(4)	OBS(1), FGD(2), KII(6)	3.3
27	Good program outcome (above threshold recovery rates)	Δ(3), ※(16)	KII(19)	1.0	30	Discrepancy on program performance outcome between routine data and KHIS reports	Ω(50)	OBS(50)	1.0
<b>Total Booster weighted</b>			<b>47.5</b>		<b>Total Barrier weighted</b>			<b>54.4</b>	
<b>Total Booster without weight</b>			<b>27.0</b>		<b>Total Barrier without weight</b>			<b>30.0</b>	



Average Simple and Weighted Boosters and Barriers

Table 14: An average of Simple and Weighted Boosters and Barriers

	SAM (OTP)		MAM (SFP)	
	Boosters	Barriers	Boosters	Barriers
List of BBs	27	28	27	30
<b>Average</b>	<b>49.5%</b>		<b>48.5%</b>	
Weighted BBs	48.5	52.2	47.5	54.4
<b>Average</b>	<b>48.15%</b>		<b>46.55%</b>	

Concept Maps: Average of positive and negative connections

The IMAM concept maps aimed to illustrate complex relationships between findings from stage one, to show links between factors how they directly or indirectly affect coverage in Garissa County. The positive links (boosters) and negative links (barriers) links were counted, with the sum of positive links (boosters) being added together while negative links (barriers) were subtracted from 100 and the average of the two factors taken, to give a prior mode.

- An average of Positive (58) and negative (43) connections impacting on OTP Program coverage
- An average of Positive (59) and negative (49) connections impacting on SFP Program coverage



GARISSA SQUEAC - SAM CONCEPT MAP JUNE 2023

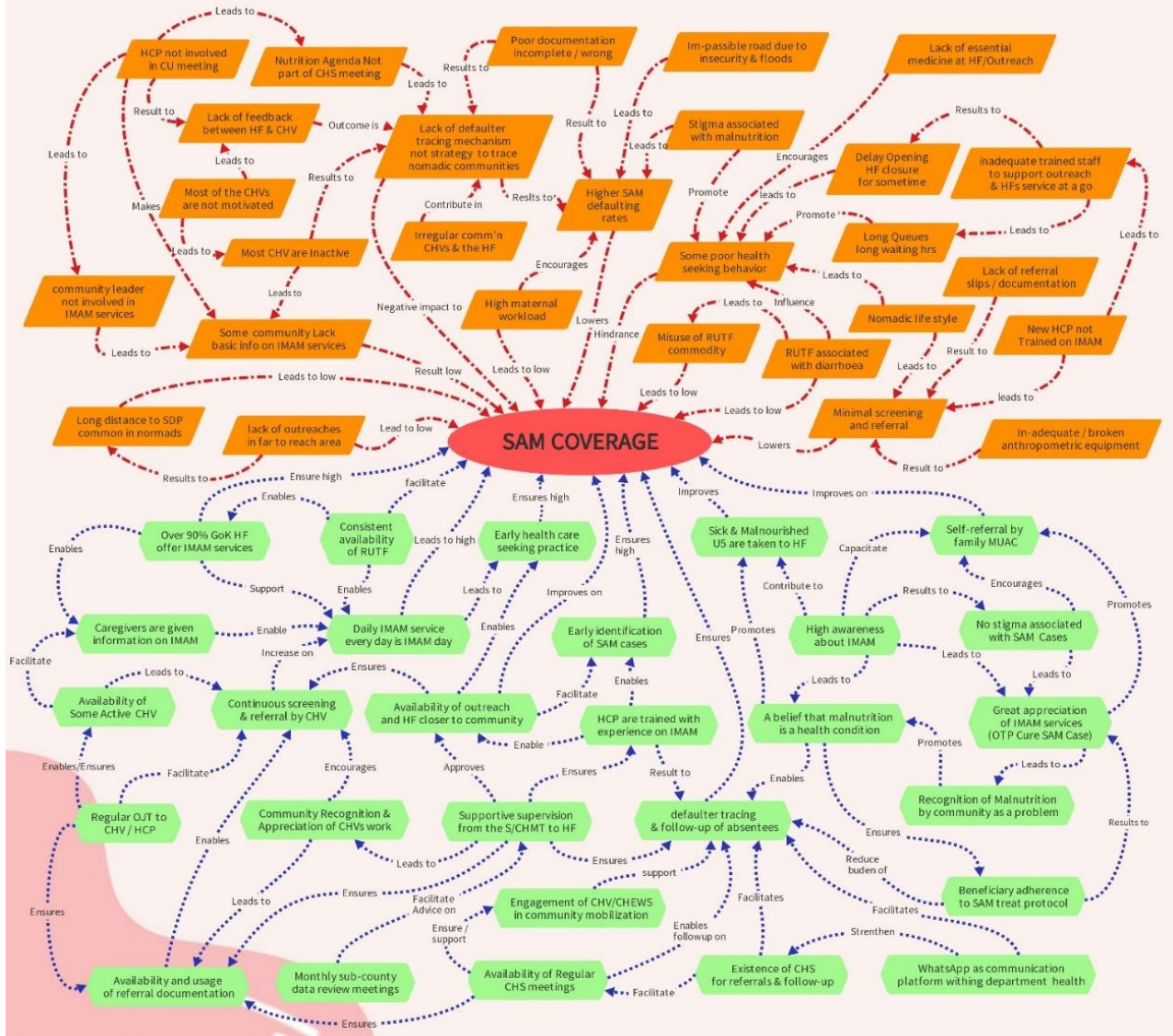


Figure 117: OTP (SAM) program Concept map

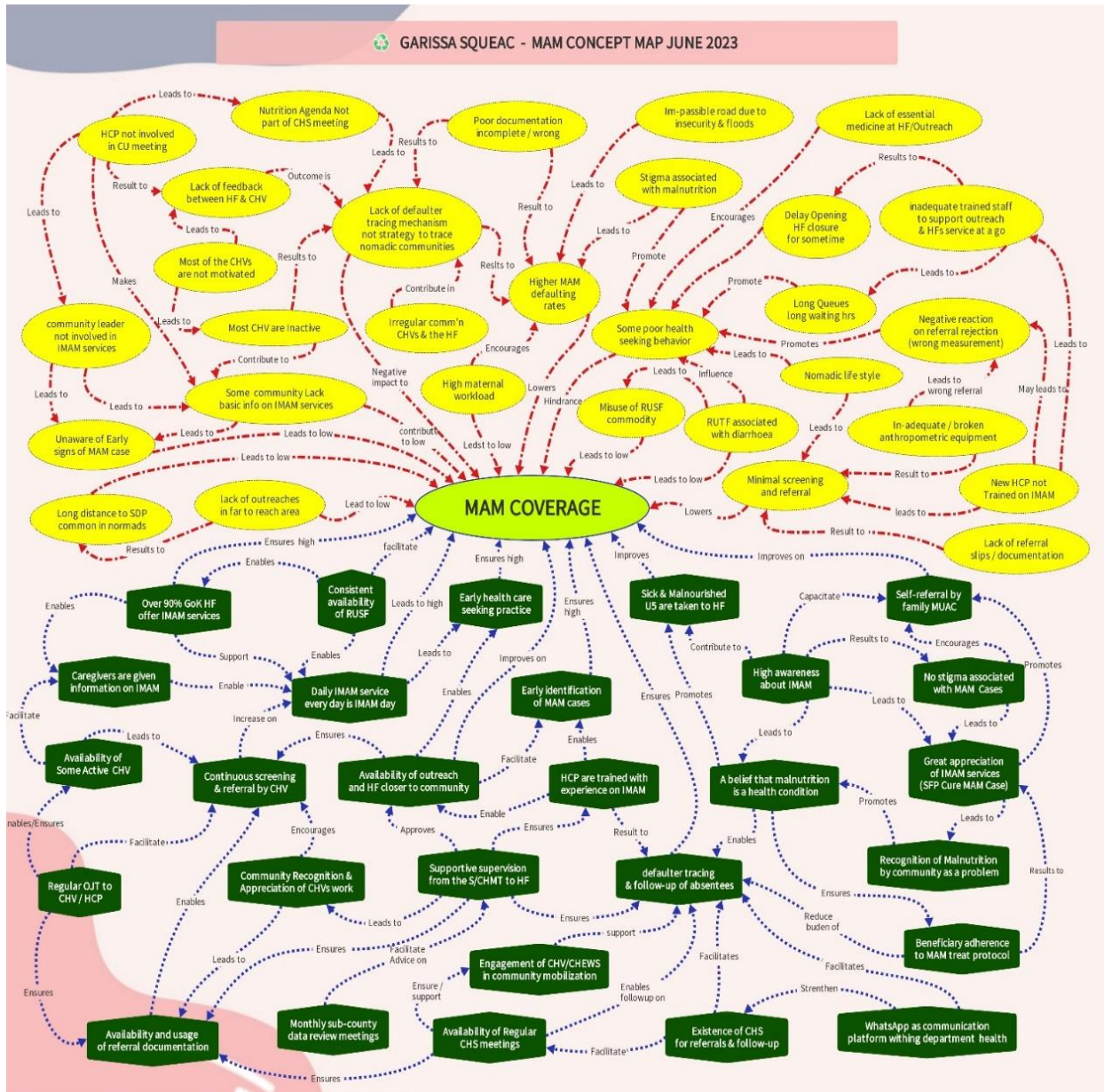


Figure 118: SFP (MAM) program Concept map

### Histogram (Belief): An Average of the Analysts belief on coverage

Developed from an average of low and coverage beliefs from trained Garissa SQUEAC analysts; software generated with credible coverage limits and used to describe and summarize prior belief. The figures were generated during a participatory group exercise with the entire investigation team. Grouped into five analysts, each gave an estimate of what they believed IMAM coverage for Garissa should be. An average of the four coverage estimates was calculated to give a prior mode.



Table 15: Average Histogram (belief) of the Analysts on IMAM Coverage

	SAM HISTOGRAM - 60.4%		MAM HISTOGRAM - 57.0%	
	BOOSTER	BARRIER	BOOSTER	BARRIER
<b>AVERAGE HISTOGRAM</b>	<b>64.4</b>	<b>43.6</b>	<b>60.8</b>	<b>46.8</b>
Person 1	60.00	66.00	64.00	44.00
Person 2	70.00	30.00	65.00	40.00
Person 3	66.00	47.00	55.00	57.00
Person 4	72.00	35.00	63.00	38.00
Person 5	54.00	40.00	57.00	55.00

Calculating the Prior Mode and the Prior probability distribution:

- +/-20) was used to estimate the minimum and maximum probable value for coverage consistent with prior information.
- +/-20% was used because Garissa SQUEAC analysts felt that there was very little uncertainty about the value of the prior mode.

Table 16: Calculating the SAM/OTP Prior Mode and the Prior probability distribution

SAM PRIOR ESTIMATION				
METHODS	Boosters total	Barriers total	Formula	Prior mode
Simple barrier and booster prior mode	27.0	28.0	$(BST + (100-BRR)) / 2$	49.5
Weighted Barrier and booster prior mode	48.5	52.2	$(BST + (100-BRR)) / 2$	48.2
Concept map prior mode (linkage)	58	43	$(BST + (100-BRR)) / 2$	57.5
Histogram	64.4	43.6	$(BST + (100-BRR)) / 2$	60.4
<b>FINAL PRIOR MODE</b>				<b>53.9</b>
Use +/- 20% range of probable values				0.539
Minimum (Minus 20% or 25% of the Mode)				0.34
Maximum (Minus 20% or 25% of the Mode)				0.74
Precision Usually 0.10 (10%) but can go up to 0.15 (15%)				0.11
				L 0.27
				U 0.80
				$\mu$ 0.54
				$\sigma$ 0.09
				Alfa ( $\alpha$ ) 16.8
Beta ( $\beta$ )				14.3
<b>SUGGESTED SAMPLE SIZE FOR STAGE 3 (Bayes SQUEAC Plot)</b>				<b>46</b>



Table 17: Calculating the MAM/SFP Prior Mode and the Prior probability distribution

MAM PRIOR ESTIMATION				
METHODS	Boosters total	Barriers total	Formula	Prior mode
Simple barrier and booster prior mode	27.0	30.0	$(BST + (100-BRR)) / 2$	48.5
Weighted Barrier and booster prior mode	47.5	54.4	$(BST + (100-BRR)) / 2$	46.6
Concept map prior mode	59	49	$(BST + (100-BRR)) / 2$	55.0
Histogram	60.8	46.8	$(BST + (100-BRR)) / 2$	57.0
<b>FINAL PRIOR MODE</b>				<b>51.8</b>
Use +/- 20% range of probable values				0.518
<i>Minimum (Minus 20% or 25% of the Mode)</i>				0.32
<i>Maximum (Minus 20% or 25% of the Mode)</i>				0.72
<i>Precision Usually 0.10 (10%) but can go up to 0.15 (15%)</i>				0.11
				L 0.25
				U 0.78
				$\mu$ 0.52
				$\sigma$ 0.09
				Alfa ( $\alpha$ ) 16.2
				Beta ( $\beta$ ) 15.1
<b>SUGGESTED SAMPLE SIZE FOR STAGE 3 (Bayes SQUEAC Plot)</b>				<b>46</b>

### Plotting the Prior

The Bayes calculator was used to develop both OTP and SFP Bayes prior plots. The alpha ( $\alpha$ ) and beta ( $\beta$ ) shape parameters were obtained from Bayes Calculator. This in turn helped calculate the required sample size for both SAM and MAM cases for the wide area survey (Stage 3). The sample sizes calculated for SAM and MAM cases were 46 each.

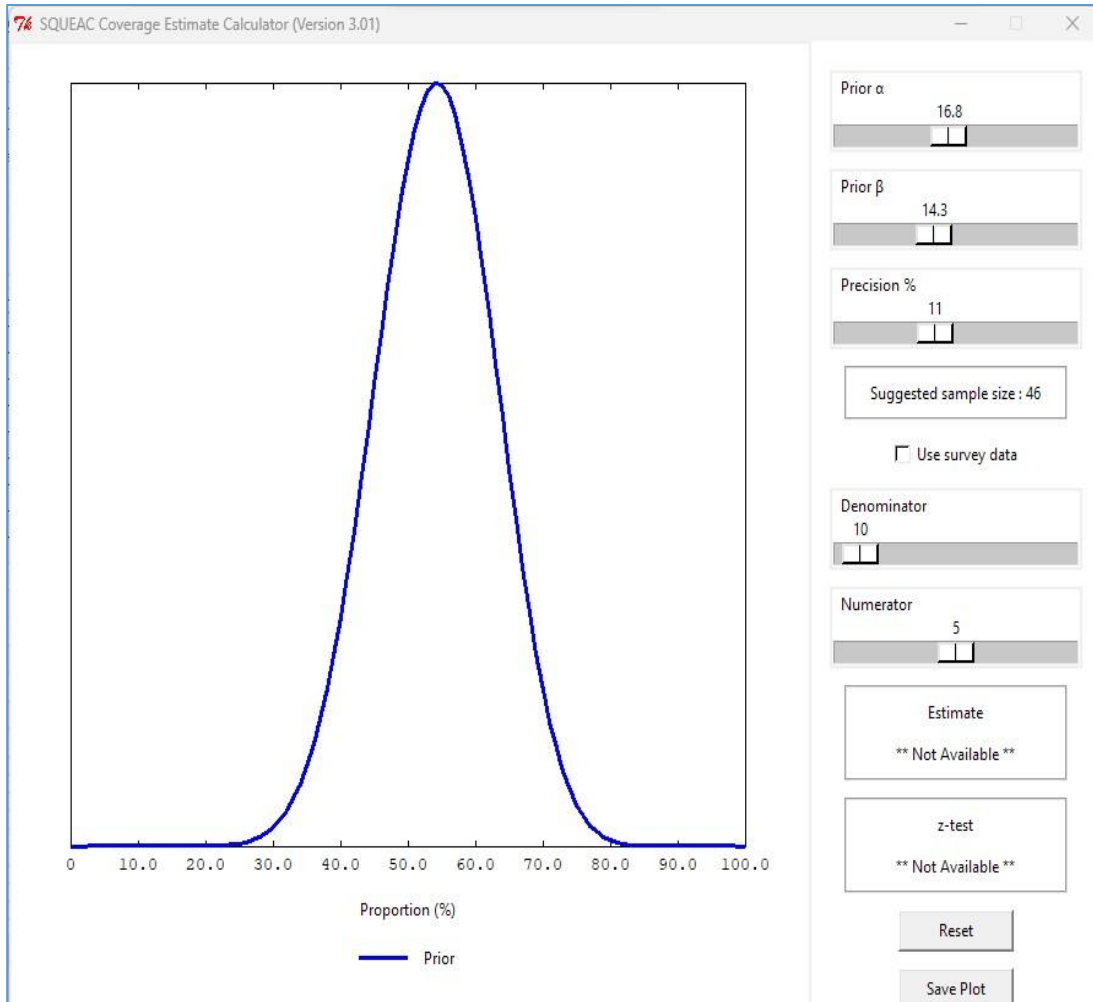


Figure 119: OTP (SAM) Prior plot

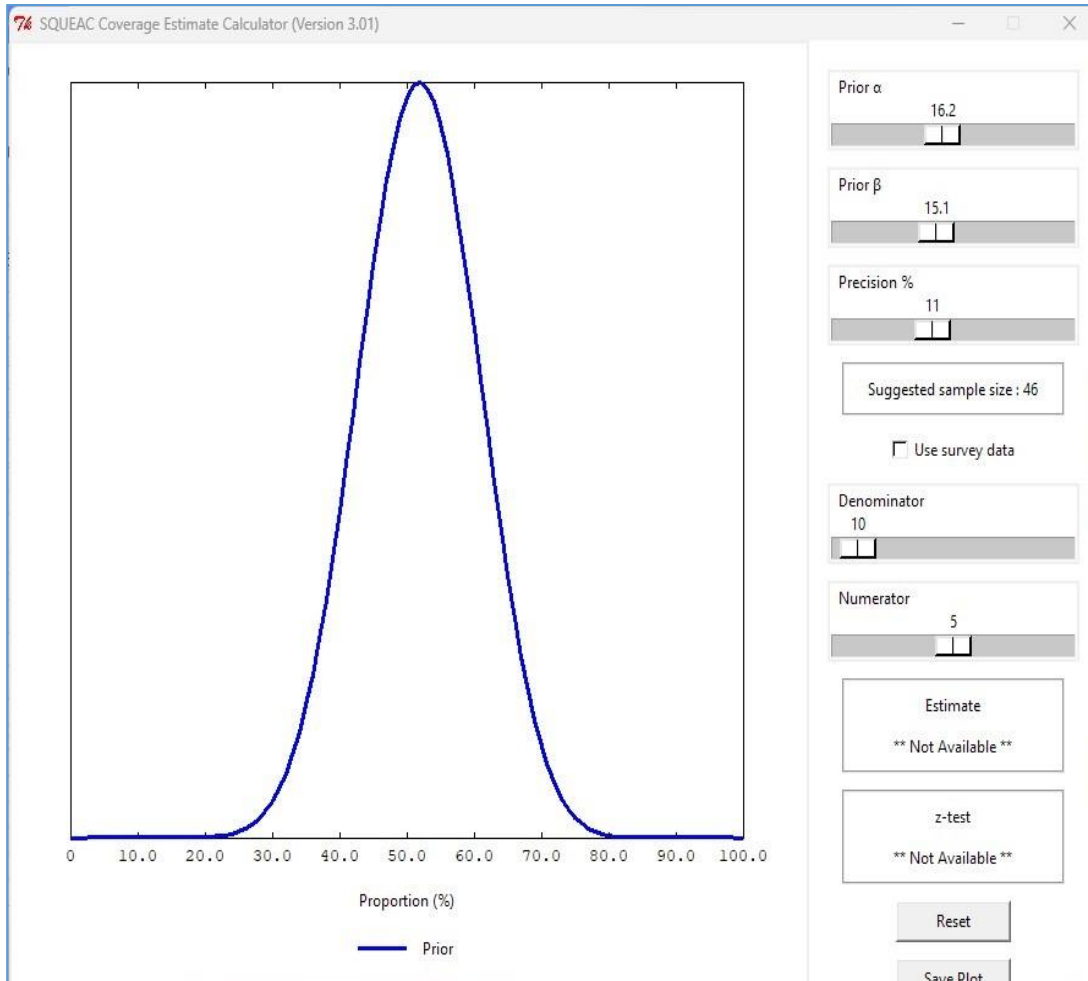


Figure 120: SFP (MAM) Prior plot

## STAGE THREE: WIDE AREA SURVEY

### Planning for Wide Area Survey

#### Calculating the number of villages to Visit

- The Bayes calculator was used to develop both OTP and SFP Bayes prior plots.
- The alpha ( $\alpha$ ) and beta ( $\beta$ ) shape parameters were obtained from Bayes Calculator. This in turn helped calculate the required sample size for both SAM and MAM cases for the wide area survey (Stage 3).
- The sample sizes calculated for SAM and MAM cases were 46 each.
- The number of villages to be visited for the Wide Area Survey were calculated using the formula below;

*n*villages

$$= \left\lceil \frac{n}{\text{average village population all ages} \times \frac{\text{percentage of population 6 – 59 months}}{100} \times \frac{\text{SAM or MAM prevalence}}{100}} \right\rceil$$



Table 18: Parameters for calculating the no. of villages

SAM Prevalence by MUAC	0.8% (0.4% - 1.6% 95% CI)	Total Population	965,258
Case Sample size	46	Proportion of U5 pop.	15.10%
Total Villages	805	No of Village/Clusters	32
Average Village Pop.	1199		
MAM Prevalence by MUAC	11.9% (9.6% - 14.1% 95% CI)	Total Population	965,258
Case Sample size	46	Proportion of U5 pop.	15.10%
Total Villages	805	No of Village/Clusters	2
Average Village Pop.	1199		

*N villages = SAM or MAM sample Size as per the Bayes Calculator ÷ by (average village pop. \* Proportion of U5s from county pop. (15.5%) \* %SAM OR MAM Prevalence)*

- SAM prevalence by MUAC was used to determine sample size calculation for this assessment; it was preferred over SAM by WHZ since a low estimate of SAM helps ensure that the survey will achieve the target sample size.

The Wide Area Survey in Garissa County was conducted in **32 villages**, since **SAM** had the largest village sample. In sampling the villages to visit, the sampling interval was applied until the end of list of the sampling frame, with the rounding up and rounding down being applied alternately.

### Sampling Method

Spatially stratified systematic sampling was used where stratification was done by Sub County, including systematic selection of villages from a complete list of updated villages.

The insecure and inaccessible villages were omitted from the sampling frame before applying the sampling interval as follows;

$$\text{Sampling Interval} = \frac{\text{Total no. of villages in the county (805)}}{[\text{no. of villages to be assessed (32)}]} = 25.3$$

After calculation of the sampling interval the first village was sampled randomly chosen between one (1) and the sampling interval (25). Then the sampling interval applied until the end of list. Since the sampling interval had a decimal point, rounding up and rounding down will be applied alternately.

### *Organization of the Survey and case finding methodology:*

The wide area survey was conducted for five (5) days by six (6) teams, with two teams going for an extra day to cover all the 32 villages (clusters). The tools during data collection by each team included the following;

- Paediatrician MUAC Strap
- A height board and Weighing scale
- Samples of RUTF & RUSF
- Photos of SAM Cases
- Screening Tally sheet
- Summary of screening
- Blank form for covered and Non-covered cases, and Referral slips



The teams were trained on how to conduct Anthropometric measurements and administering the qualitative questionnaire, then released for data collection. The wide area survey in Garissa County adopted all the three criteria used in admission in the County; MUAC, Z-scores and/or bilateral oedema in screening children for acute malnutrition. Data collection involved exhaustive screening of all children 6 to 59 months will be done to locate ALL SAM and MAM cases and to determine if they are:

- Covered SAM/MAM cases (*Cin*)
- Non-covered SAM/MAM cases (*Cout*)
- Recovering cases (*Rin*).

All responses and measurements will be recorded into a tablet/phone with wide area survey data collection tool coded into Kobo collect platform.

## WIDE AREA SURVEY FINDINGS

Table 19: Children screened during the Wide Area Survey

CL #	CLUSTER NAME	TOTAL U5	<6M	SAM (< -3SD)	MAM (≥3 - <2SD)
1	BULLA LEBILEY	64	1	3	7
2	QOBOYEY	48	-	2	8
<b>BALAMBALA SUB-COUNTY</b>		<b>112</b>	<b>1</b>	<b>5</b>	<b>15</b>
3	AFWAH QORAY	45	1	2	3
4	BULA DEYDEY	81	12	5	8
5	BULLA ABASS	62	11	5	10
6	BULLA JAMAM	78	11	7	12
7	BULLA SHEIKH	53	6	9	3
8	FAF KALALA	11	-	-	-
9	JHIR YARE	44	3	5	2
10	MOROTHILEY	31	-	3	6
11	UTHOLE	31	1	9	7
<b>DADAAB SUB-COUNTY</b>		<b>436</b>	<b>45</b>	<b>45</b>	<b>51</b>
12	DIISO 2	32	-	2	8
13	NANIGHI	91	1	7	14
<b>FAFI SUB-COUNTY</b>		<b>123</b>	<b>1</b>	<b>9</b>	<b>22</b>
14	BULLA B	67	4	1	8
15	BULLA SALAMA	69	1	3	4
16	NGAMIA ROAD	63	5	4	8
<b>GARISSA SUB-COUNTY</b>		<b>199</b>	<b>10</b>	<b>8</b>	<b>20</b>
17	ABAALA	88	4	5	10
18	BULA GAWAN	74	2	5	11
19	BULLA GURE	102	4	3	14
20	BULLA RAHMA	96	4	2	11
21	DOFAREY	27	4	1	3
22	GESIREB PRIMARY	113	10	6	11
23	HURSAN b	47	4	2	9
24	MUSBAREY	44	6	3	5
25	SHORA	127	7	11	17





<b>HULUGHO SUB-COUNTY</b>		<b>718</b>	<b>45</b>	<b>38</b>	<b>91</b>
26	BULLA DUALE A	40	-	1	3
27	BULLA KUNDI	85	11	2	9
28	BULLA WEAHA	71	-	2	11
29	WAKAB GARAS	68	3	3	10
<b>IJARA SUB-COUNTY</b>		<b>264</b>	<b>14</b>	<b>8</b>	<b>33</b>
30	DARUSALAAM	30	2	2	4
31	HAMADID	43	-	3	4
32	WAYAMA JIBRIL	115	-	4	12
<b>LAGDERA SUB-COUNTY</b>		<b>188</b>	<b>2</b>	<b>9</b>	<b>20</b>
<b>COUNTY (ALL U5)</b>		<b>2,040</b>	<b>118</b>	<b>122</b>	<b>252</b>
<b>6-59M (ALL)</b>		<b>1,922</b>			
<b>6-59M NOT AT HOME</b>		<b>62</b>			
<b>6-59M ASSESSED</b>		<b>1,860</b>			

### Cases identified per Sub County

The number screened and, SAM and MAM cases were mostly influence by the number of clusters sampled as well as population per sub-county.

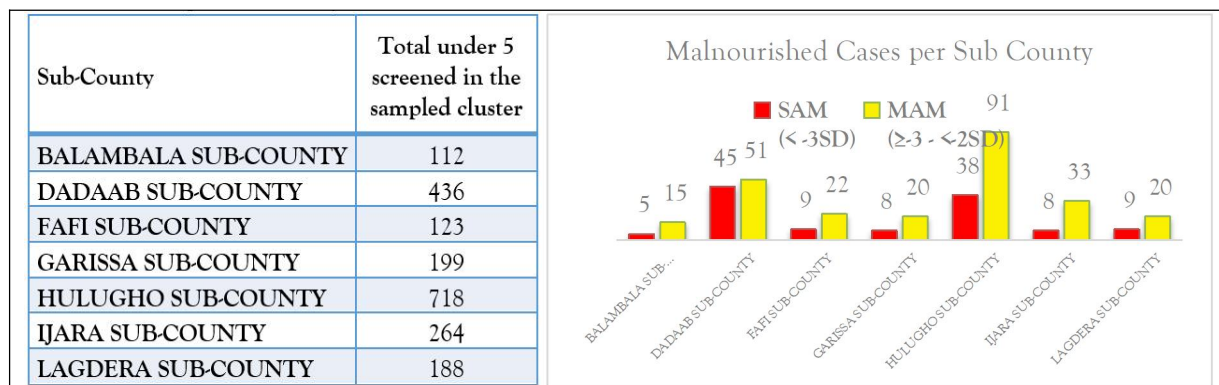


Figure 121: Malnourished Cases identified during the Wide Area Survey per Sub County

### Summary of the Wide Area Survey Findings

- Most of the cases were identified by use of WHZ-Score
- 14 SAM Cases were identified by MUAC only, of which 6 were covered in OTP program
- 28 MAM Cases were identified by MUAC only, of which only 3 were covered in SFP program

Table 20: Cases Identified for Coverage Estimation

Cases Identified by MUAC + WHZ-Score	SAM [ $< -3SD$ ]	MAM [ $< -2SD$ ]	NML [ $\geq -2SD$ ]
TOTAL CASES	136	280	1496
PREVALENCE	7.1%	14.6%	78.2%
CASES IN IMAM	59	122	70



CASES IN OTP	48	13	26
CASES IN SFP	11	109	44
CASE NOT IN IMAM	77	11	1426
CASES NOT IN OTP	88	267	1470
CASES NOT IN SFP	125	171	1452
SAM RECOVERING	39 Cases 63.9%		
MAM RECOVERING	44 Cases 36.6%		

## Coverage Estimation

### Coverage Estimator

The final coverage estimates for IMAM program in Tana River County was estimated using;

- **Single Coverage Estimator** - estimated as shown in the formula below;

$$\text{Single Coverage Estimate} = \frac{C_{in} + R_{in}}{C_{in} + C_{out} + R_{in} + R_{out}}$$

- **Effectiveness of timely case-finding and recruitment indicator** - estimated as shown in the formula below;

$$\text{Effectiveness Coverage} = \frac{C_{in}}{C_{in} + C_{out}}$$

### Estimating Recovering Out Cases ( $R_{out}$ )

Calculating  $R_{out} = \frac{1}{k} \times (R_{in} \times \frac{C_{in} + C_{out} + 1}{C_{in} + 1} - R_{in})$ ;

Where  $k$  is a correction factor calculated as;

$$k = \frac{\text{Mean length of an untreated episode (7.5 months)}}{\text{Mean length of a treated episode (ALOS cured in months)}}$$

Therefore, estimated Recovering out cases for each program was estimated as follows;

- OTP/SAM - 19 cases
- SFP/MAM - 18 cases



Tools for SQUEAC and SLEAC

Numbers | Single SLEAC | Multiple SLEACs | Barriers Plot | Capture-Recapture

Current cases in program : 48

Current cases NOT in program : 88

Recovering cases in program : 39

Mean length of untreated episodes : 7.5 months

Mean length of treated episodes : 2 months

Reset

Calculate

**SAM/OTP Program**

```

Current cases in program : 48
Current cases NOT in program : 88
Recovering cases in program : 39
Average length of untreated episodes : 7.5
Average length of treated episodes : 2

Correction factor (k) : 3.75
Recovering cases NOT in program : 18 (estimated)

Single Coverage (Numerator, Denominator) : 87, 193
Point Coverage (Numerator, Denominator) : 48, 136
Period Coverage (Numerator, Denominator) : 87, 175
    
```

Figure 122: Estimating Rout in OTP/SAM program

Tools for SQUEAC and SLEAC

Numbers | Single SLEAC | Multiple SLEACs | Barriers Plot | Capture-Recapture

Current cases in program : 109

Current cases NOT in program : 171

Recovering cases in program : 44

Mean length of untreated episodes : 7.5 months

Mean length of treated episodes : 2.5 months

Reset

Calculate

**MAM/SFP Program**

```

Current cases in program : 109
Current cases NOT in program : 171
Recovering cases in program : 44
Average length of untreated episodes : 7.5
Average length of treated episodes : 2.5

Correction factor (k) : 3
Recovering cases NOT in program : 22 (estimated)

Single Coverage (Numerator, Denominator) : 153, 346
Point Coverage (Numerator, Denominator) : 109, 280
Period Coverage (Numerator, Denominator) : 153, 324
    
```

Figure 123: Estimating Rout in SFP/MAM program



SINGLE COVERAGE ESTIMATE: Calculated and Plotted

Table 21: Calculated Confidence Interval

	SAM [ $< -3SD$ ] OTP Program	MAM [ $\geq 3 - < 2SD$ ] SFP Program
C-in Program	48	109
C-out of Program	88	171
R-in Recovering	39	44
R-out of Program	22	18
Numerator	87	153
Denominator	193	346
Single Coverage Estimate (manually calculated)	45.1%	44.2%
Single Coverage Estimate (Bayes Plot)	<b>46.3%</b> (39.8-52.7 95% CI)	<b>44.9%</b> (39.4-50.7 95% CI)

Bayes Plotted Confidence Interval

The current Single coverage estimate for OTP is **46.3%** (39.8 - 52.7 95% CI) with a **P value of 0.3526**, indicating that there is no Prior-Likelihood conflict and hence the **results are valid**.

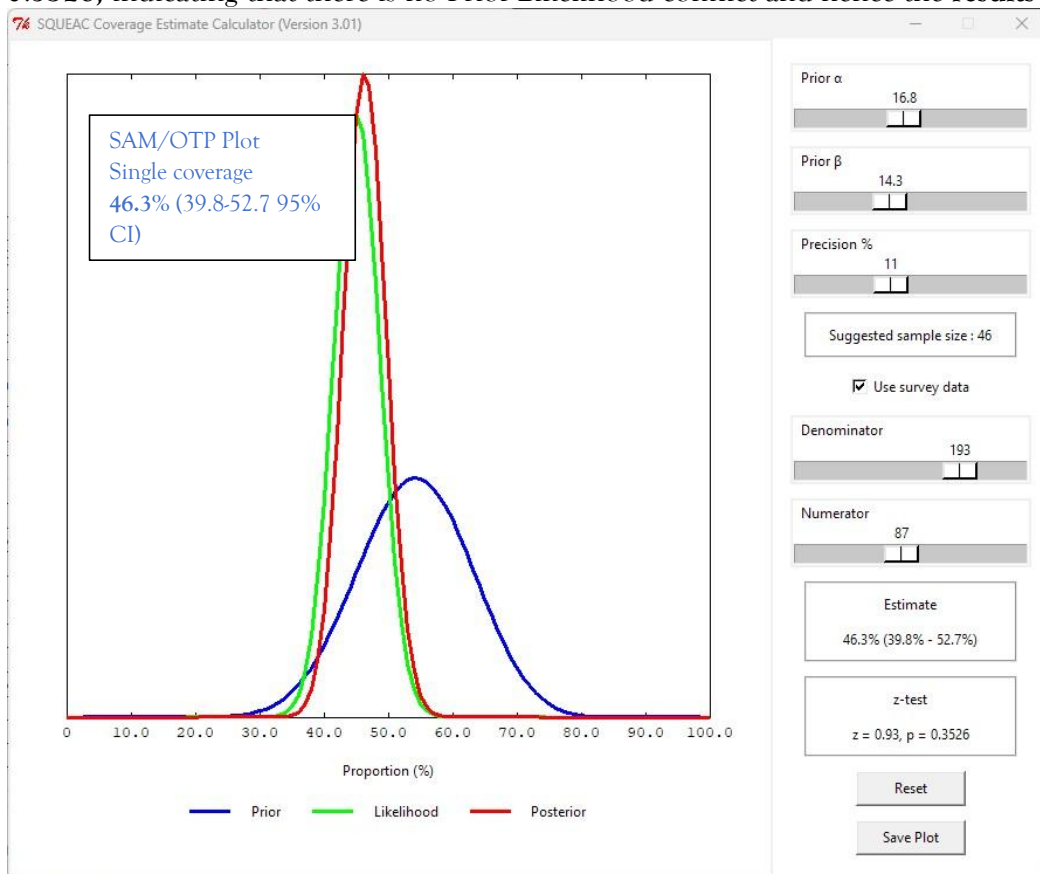


Figure 124: Single Coverage Estimate SAM/OTP Plot

The current Single coverage estimate for SFP is 44.9% (39.4 – 50.7 95% CI) with a P value of 0.4226, indicating that there is no Prior-Likelihood conflict and hence the **results are valid**.

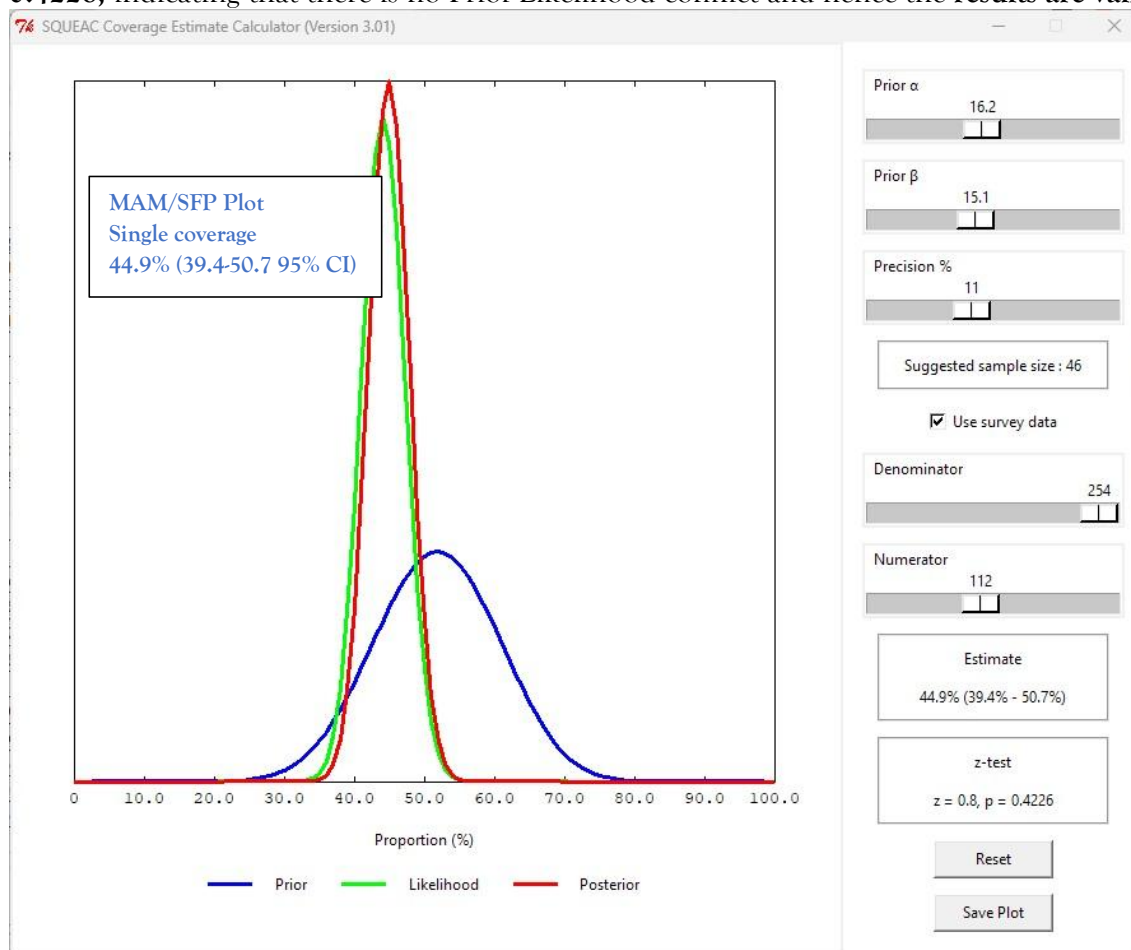


Figure 125: Single Coverage Estimate MAM/SFP Plot

### EFFECTIVENESS OF COVERAGE ESTIMATE: Calculated and Plotted

Table 22: Calculated Coverage Estimate

	SAM [ $< -3SD$ ] OTP Program	MAM [ $\geq -3 - < -2SD$ ] SFP Program
C-in Program	48	109
C-out of Program	88	171
<i>Numerator</i>	48	109
<i>Denominator</i>	136	280
Effectiveness of Coverage Estimate ( <i>manually calculated</i> )	35.3%	38.9%
Effectiveness of Coverage Estimate ( <i>Bayes Plot</i> )	38.6% (31.6-46.4 95% CI)	40.2% (34.7-46.0 95% CI)



*Bayes Plotted Confidence Interval*

The current Effectiveness of coverage estimate for OTP is **38.6%** (31.6-46.4 95% CI) with a P value of **0.0561**, indicating that there is no Prior-Likelihood conflict and hence the **results are valid**.

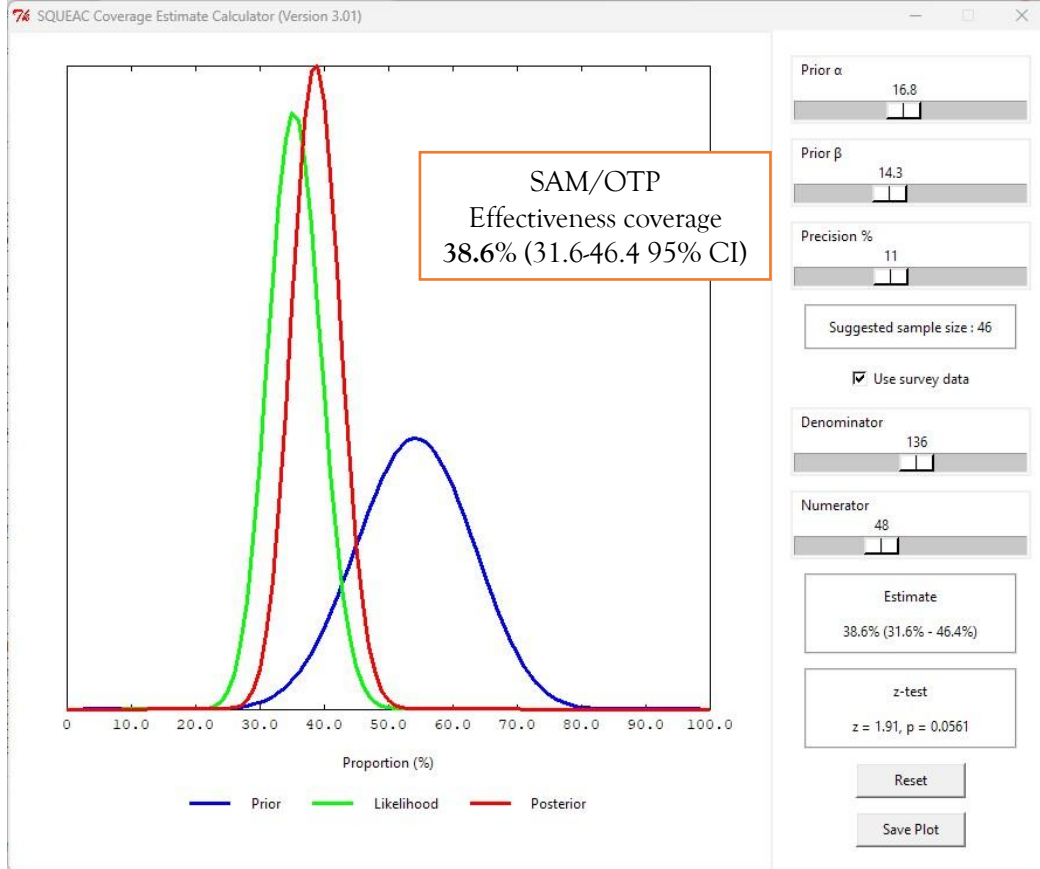


Figure 126: Effectiveness of Coverage SAM/OTP Plot

The current Effectiveness of coverage estimate for OTP is **40.2%** (34.7-46.0 95% CI) with a P value of **0.1749**, indicating that there is no Prior-Likelihood conflict and hence the **results are valid**.

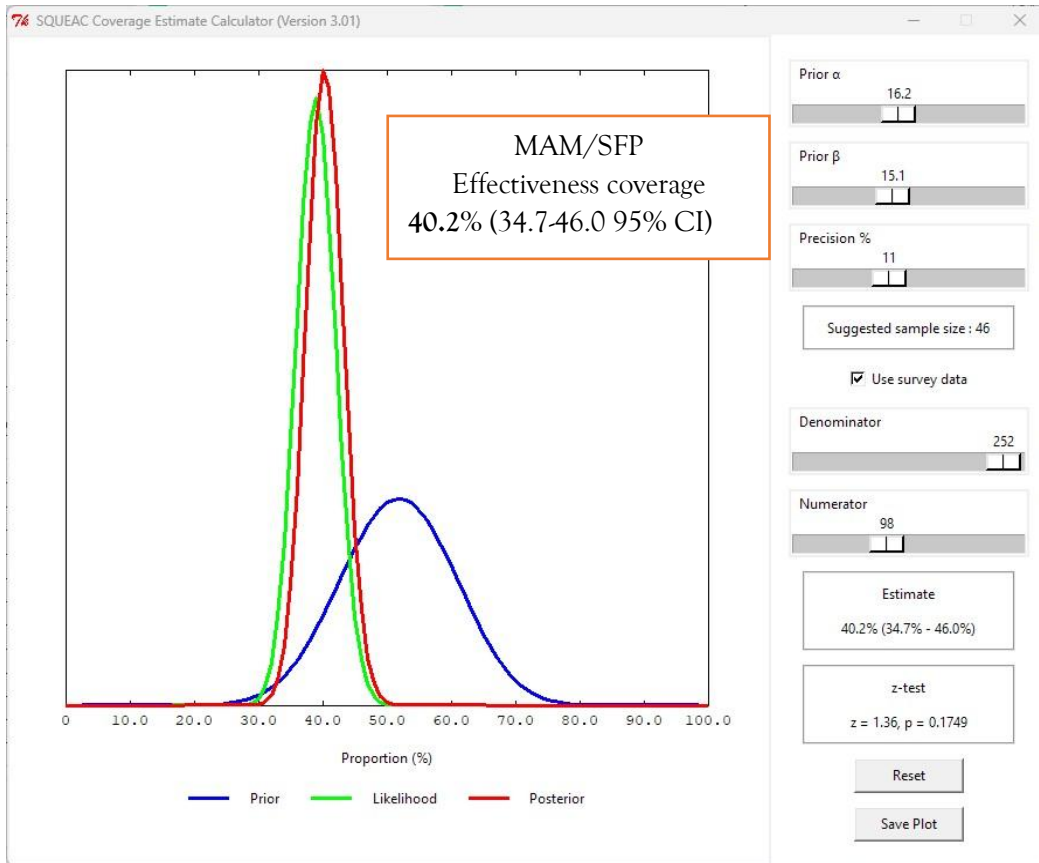


Figure 127: Effectiveness of Coverage MAM/SFP Plot

### Assessing Met Need by IMAM Program

The formula is as follows;

$$\text{Met Need} = \text{Effectiveness (cured rate)} * \text{Coverage estimate}$$

Table 23: Calculating MET NEED

	OTP Program	SFP Program
Single coverage Estimate =	46.3%	44.9%
Cured rate (Average, May 2022 – April 2023) =	69.0%	76.3%
Therefore, Met Need =	=0.463*0.690 = 0.3353 =31.95%	=0.449*0.763 =0.3792 =34.26%

Both OTP & SFP program in Garissa County have low coverage, hence they do not meet the need (low cure rate and low coverage), indicating late case finding and late treatment seeking, as well as poor compliance and poor retention from admission to cure.



### Qualitative Data Findings from Wide Area Survey

#### Reasons Covered and Not Covered in SAM (OTP)

- Maternal workload (caregivers too busy), lack of conviction that the program can help the child and long distance to the service delivery point were some of the reasons given by caregivers of non-covered SAM cases
- On the brighter side, diagnosis of malnutrition cases at the outpatient department during a visit to the health facility, recognition of malnutrition as a disease by the caregivers and reduced distance to the service delivery points were some of the reasons why most SAM cases were covered.

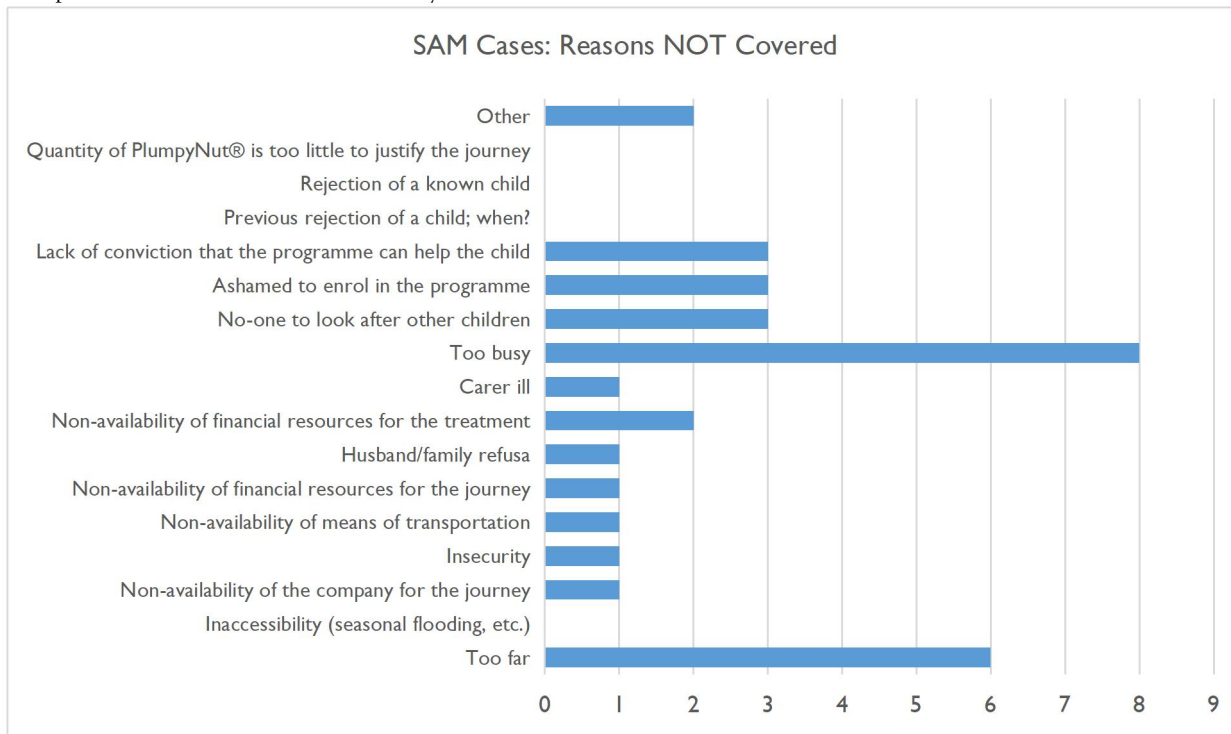


Figure 128: Reasons given by Carers of Non-Covered SAM cases



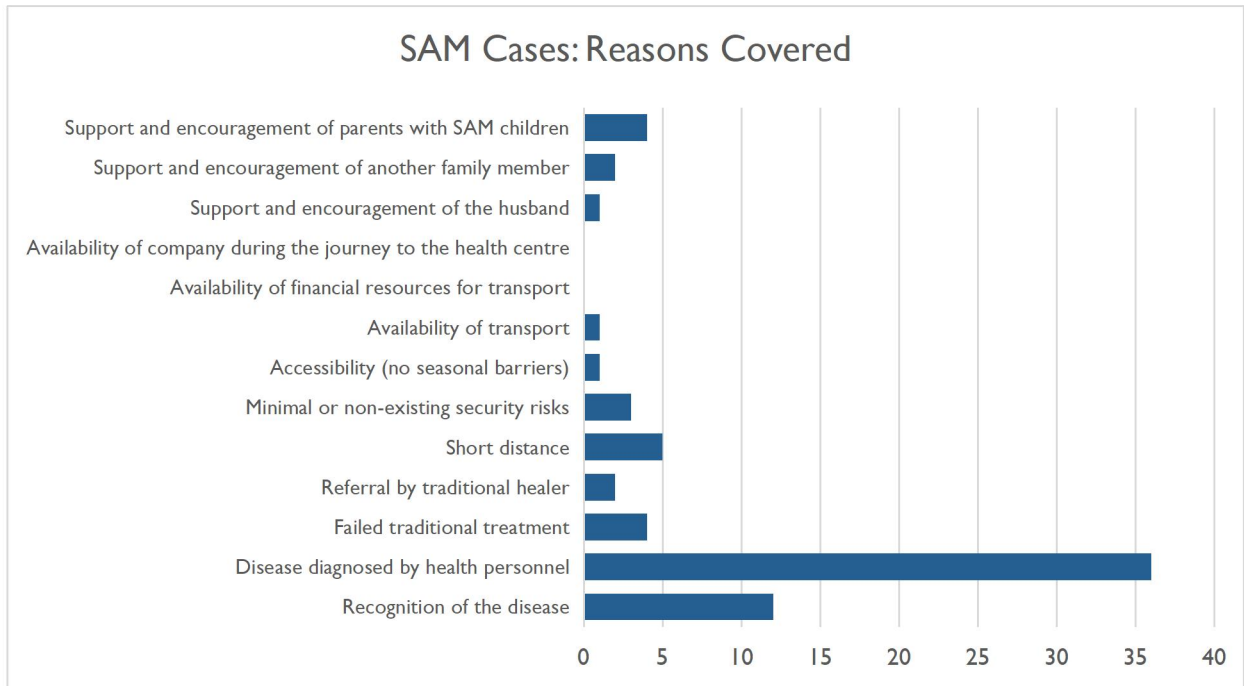


Figure 129: Reasons given by Carers of Covered SAM cases

#### Reasons Covered and Not Covered in MAM (SFP)

- Maternal workload (caregivers too busy), transport cost to the health service delivery point, lack of conviction that the program can help the child and long distance to the service delivery point were some of the reasons given by caregivers of non-covered MAM cases.
- On the brighter side, diagnosis of malnutrition cases at the outpatient department during a visit to the health facility, recognition of malnutrition as a disease by the caregivers, support and encouragement by other caregivers, and reduced distance to the service delivery points were some of the reasons why most MAM cases were covered.

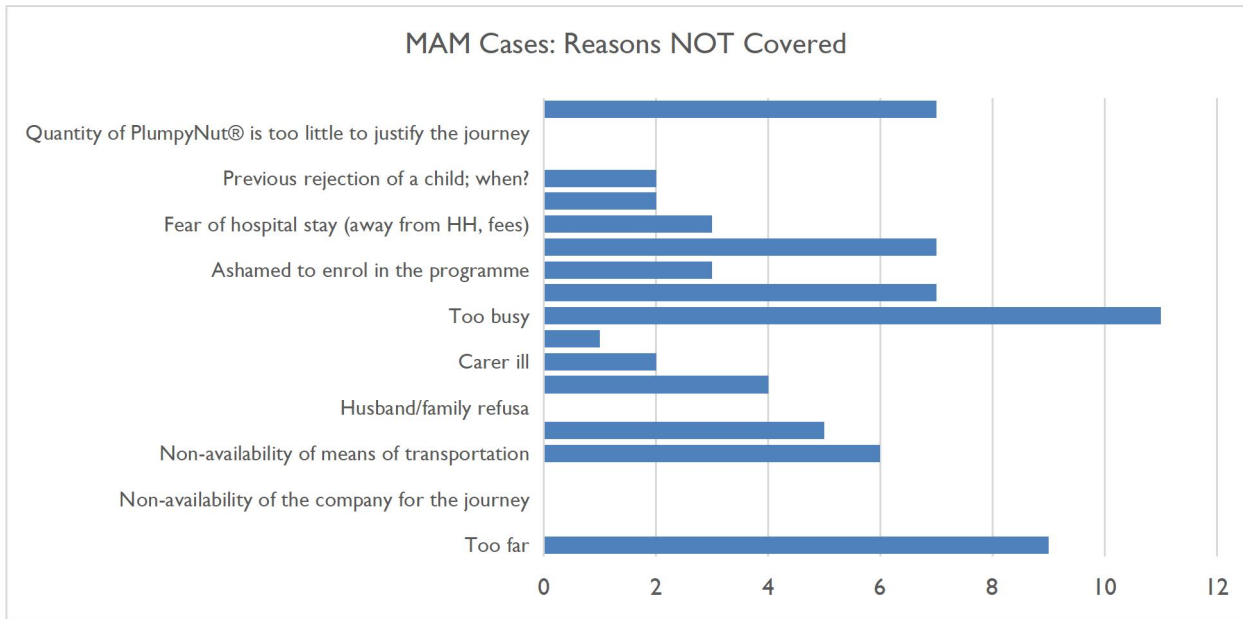


Figure 130: Reasons given by Carers of Non-Covered MAM cases

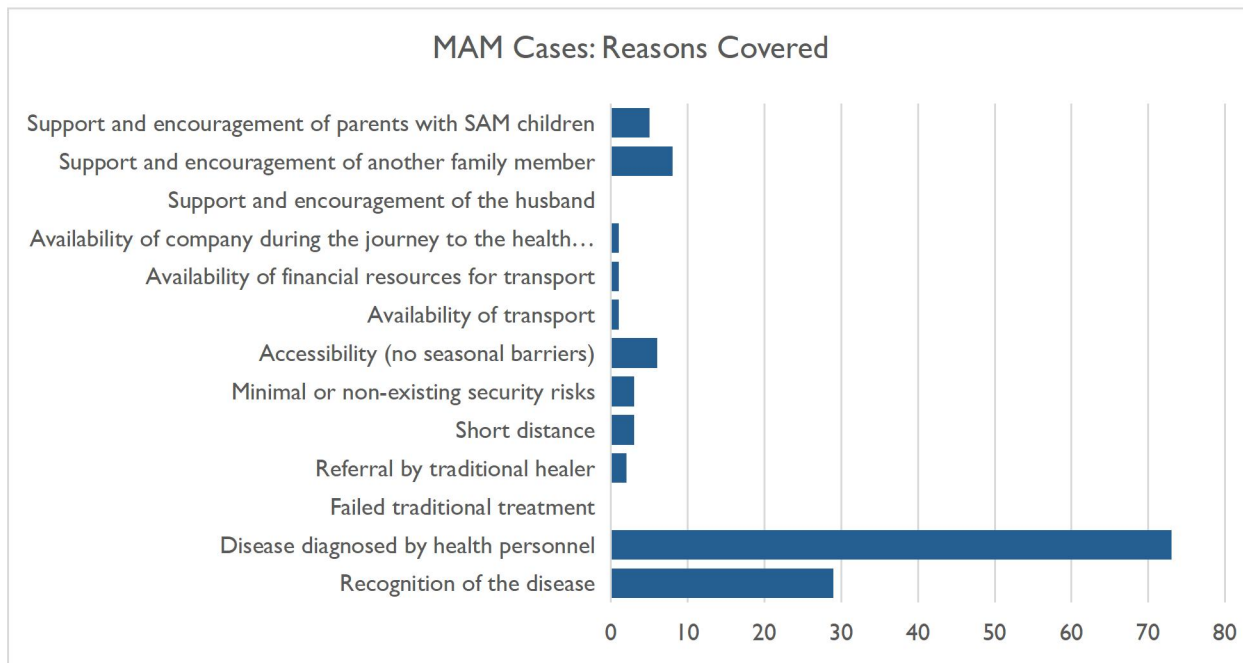


Figure 131: Reasons given by Carers of Covered MAM cases



## DISCUSSION AND CONCLUSION

### Discussion

The current Single coverage estimate for OTP is 46.3% (39.8-52.7 95% CI) with a P value of 0.3526, indicating that there is no Prior-Likelihood conflict and hence the results are valid. The current OTP coverage is a slight decline from the previous one (SQUEAC assessment, 2019), where the estimated overall Single coverage for Garissa County was 55.4% (43.3-66.9 95% Credible Interval). The current Single coverage estimate for SFP is 44.9% (39.4-50.7 95% CI) with a P Value of 0.4226. This is a manually calculated estimate since the SFP denominator exceeds the Bayes Calculator cases (n) limit of 256. The current SFP coverage is a decline from the previous one (SQUEAC assessment, 2019), where the estimated overall calculated Single coverage was 59.0% (53.1 - 64.8 95% Credible Interval).

Overall, current coverage for both OTP and SFP program in Garissa County is below the SPHERE indicator for coverage in rural setting (50%). The effectiveness of coverage estimate for OTP and SFP in Garissa is 38.6% (31.6% - 46.4%) and 40.2% (34.7% - 46.0%) respectively, below the SPHERE indicator for coverage in rural setting (50%). This indicates untimely case finding and recruitment of cases into IMAM program.

Despite low coverage in IMAM program, some positive influencers (main boosters) were observed from the SQUEAC investigation in Garissa County.

a). **The Family MUAC approach** - majorly supported by partners implementing nutrition activities in the county was observed to contribute to awareness creation of malnutrition and ownership of case identification by caregivers and the community. From the wide area survey findings, only 38.8% of caregivers had seen a MUAC tape, 20.2% had the MUAC tape in the household and 17.4% had been sensitized. Fortunately, more than 50% of interviewed caregivers confirmed to refer malnourished children to the service delivery points, with 100% of the self-referrals being direct to the health facilities. Hundred percent (100%) of these interviewed caregivers, from the CUs where family MUAC implementation is happening, were able to correctly demonstrate how to measure a child malnutrition status using MUAC tape.

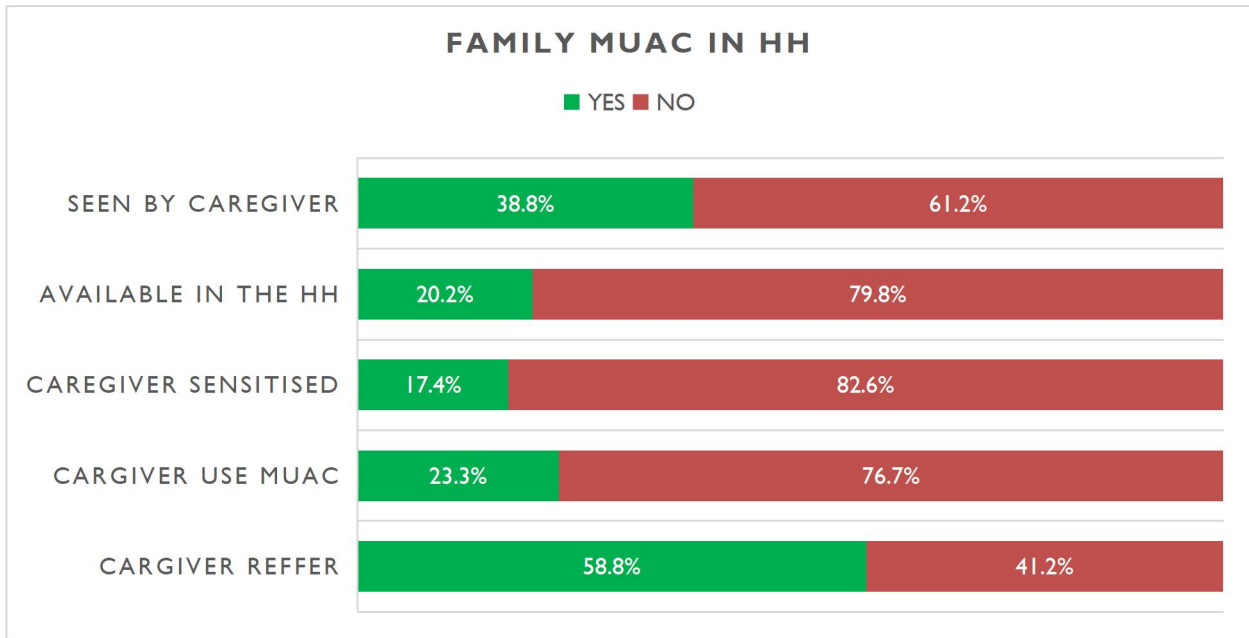


Figure 132: Awareness of Family MUAC at HH level

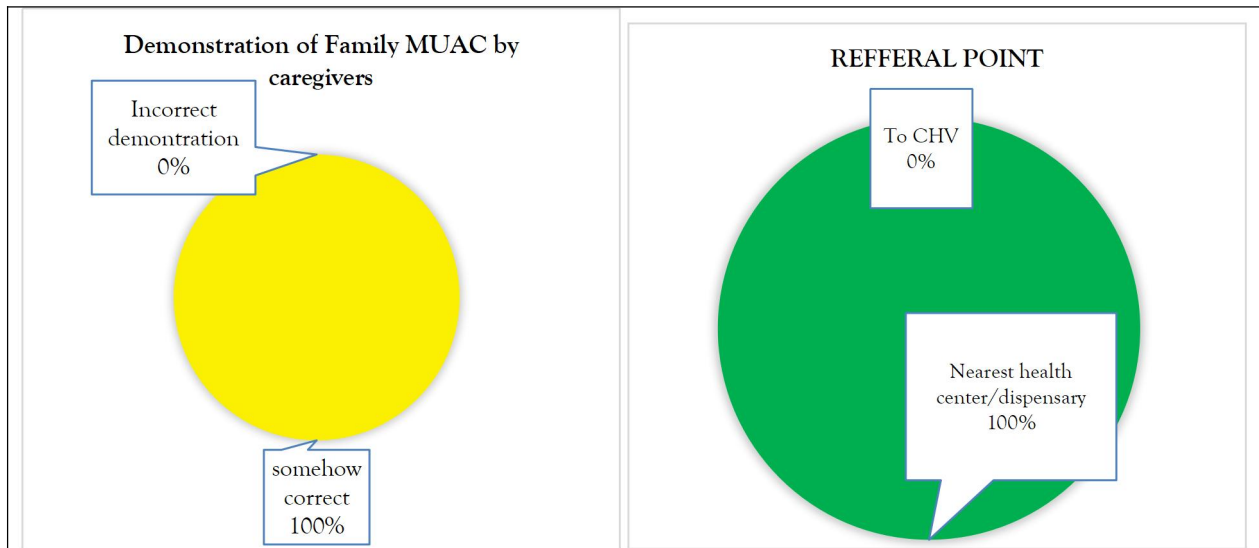


Figure 133: Demonstration of Family MUAC and referral points by caregivers

b). **Availability of nearby health facilities and outreach sites** in the hard-to-reach areas and far distance sites; bring health and nutrition services closer to the communities was associated with high IMAM coverage in these areas, where there was prior mobilization for the services and active case finding as well as follow up of program beneficiaries. The outreach activities offering these health and nutrition services ought to be consistent and well integrated in order to be effective.

c). **No stigma associated with malnutrition** – during qualitative interviews conducted at the community level, the analysts were able to note that there was minimal cases of stigma associated with severe acute malnutrition hence caregivers were able to freely seek for health treatment of their severely malnourished under-fives.

Despite the positive influencers to IMAM program, there are negative influencers that act as barriers to access and coverage. The main **barriers** to IMAM program coverage identified in Garissa include;

a). **Maternal Workload** - This has been directly associated with adherence to the IMAM treatment protocol since availability of caregivers is a big determinant to seeking treatment and follow up visits. High maternal workload, like any other opportunity cost for IMAM services in Garissa, was found to be common in Slum-like settlements in the market places. These caregivers, being the breadwinners, were involved in selling of charcoal, selling miraa during the evening, sale of milk and milk products, doing household chores to other families for money and petty trade among other income generating activities. These activities were found to engage caregivers to an extent of lacking adequate time, resulting to limited time for childcare hence poor follow up of the treatment protocol

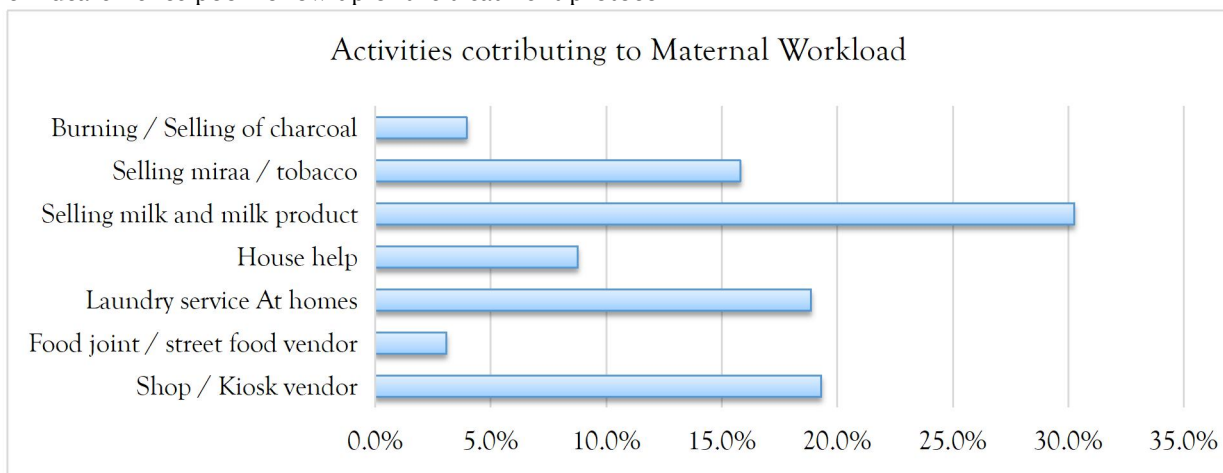


Figure 134: Activities contributing to Maternal Workload

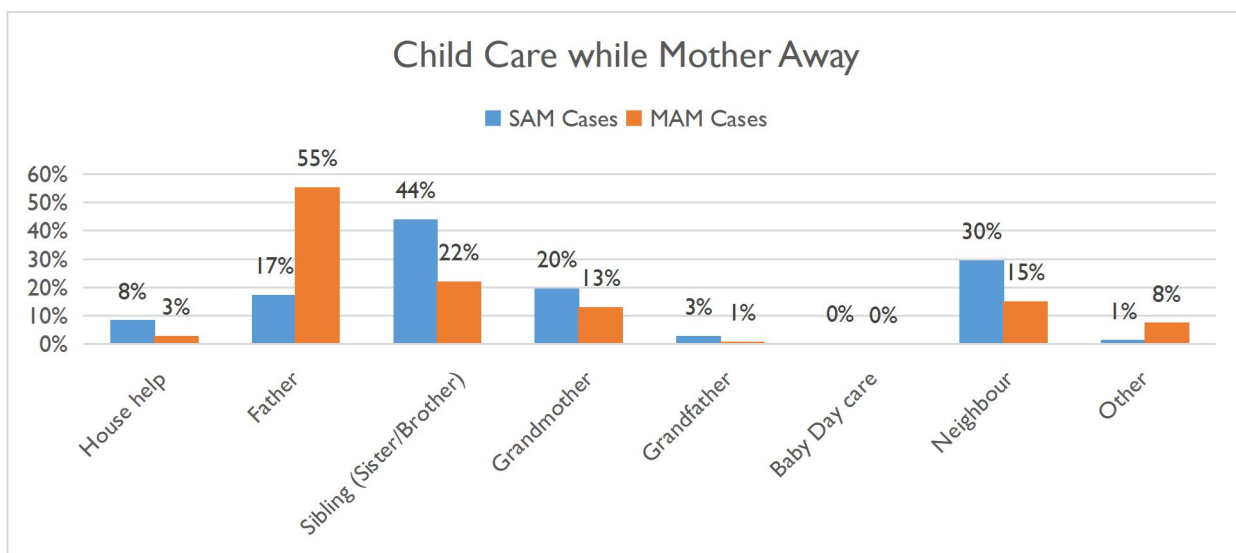


Figure 135: Child Care while Mother Away



b). **Migration among nomadic pastoralist** – during the drought emergency, in and out migration was heightened by near total depletion of pasture and water, causing communities to move beyond the usual service delivery points. Out migration was observed to interrupt follow up of treatment to completion associated very early defaulting (less than four visits), hence poor program outcome.

c). **Inactive CHVs due to lack of motivation** – CHVs play a very big role in community mobilization for IMAM services including community sensitization, case finding and referral, home visit follow up for defaulters and non-responders, social and behavior change communication on, sanitation and hygiene, and nutrition issues. During the SQUEAC investigation, it was observed, in areas where partners incentivized CHVs through monthly stipends or lunch/transport allowance, they were highly motivated to conduct community mobilization for IMAM services. In areas with no support for incentives, most CHVs were inactive in community activities, leading to inadequate and untimely case finding hence poor met need by IMAM program.

## Conclusion

Currently, IMAM coverage in Garissa County is below the recommended SPHERE threshold of 50% for rural programming. There is need to address all the negative influencers to coverage identified and listed as barriers during the investigation. The SQUEAC implementation analysts in collaboration with the county technical forum was able to develop possible recommendations, based on the identified barriers, which if implemented would improve coverage in Garissa County.



## RECOMMENDATIONS

Barrier	Possible recommendations	Responsible
<p>Poor health seeking behaviour (medical assistance)</p> <ul style="list-style-type: none"> <li>Some carers opt for home remedy and visit private clinics. One interviewed had no knowledge of the nutrition services provided at the Government HF,</li> <li>Some seeking assistance from Chemist shops</li> </ul>	<ul style="list-style-type: none"> <li>Strengthen CHS strategy and primary health care - creation of awareness and community case identification and referral linkages with health facilities.</li> <li>Improving health services at public health facilities to encourage more community members on seeking services.</li> <li>Regular inspections by government agencies for quality service delivery.</li> <li>Creation awareness on health seeking behaviors through MSP and holistic approaches. (local admins, media)</li> </ul>	SCHMT & Partners
<p>High maternal workload</p> <ul style="list-style-type: none"> <li>Common in slum-like settlements based on the Somali Community socio-economic classes; Caregivers become busy with casual or petty jobs such that they are not able to follow up treatment as required</li> <li>Most caregivers concentrate more on going to work than taking child for TCA visits</li> <li>It is challenge to follow up weekly visits for OTP program</li> </ul>	<ul style="list-style-type: none"> <li>Involvement of male partners to engage in childcare and share domestic responsibilities to ease the burden on mothers (Male engagement strategy)</li> <li>Health education sessions through MTMSGs and at health facility levels on continuous childcare practices</li> <li>Provision of essential amenities close to households i.e. water points, improved energy saving jikos to reduce time spend on fetching water and firewood.</li> <li>Roll out ICCM-CMAM program and scaling Family MUAC to increase IMAM coverage at the community level.</li> </ul>	CHVs/CHEWs/ CHAs  SCHMT & Partners
<p>Low awareness of malnutrition signs</p> <ul style="list-style-type: none"> <li>Some caregivers not able to tell immediately whether a child with MAM is malnourished or not. Some had no knowledge of the nutrition services provided at the Government facilities</li> </ul>	<ul style="list-style-type: none"> <li>Strengthen CHS strategy and primary health care - creation of awareness and community case identification and referral linkages with health facilities.</li> <li>Creation awareness on health seeking behaviors through MSP and holistic approaches. (local admins, media)</li> <li>Scale up/roll out Baby friendly community initiative (BFCI) to address knowledge gaps on</li> </ul>	CHVs/CHEWs/ CHAs  SCHMT & Partners



Barrier	Possible recommendations	Responsible
	MIYCN/IMAM.	
Community leaders not involved in awareness creation <ul style="list-style-type: none"> <li>Despite the influence they have in the community, Village Elders, Chiefs, Religious Leaders are not involved in creating awareness for malnutrition and signs</li> </ul>	<ul style="list-style-type: none"> <li>Inclusion of key community leaders in community health and nutrition forums (Malezi bora.....)</li> <li>Scale up/roll out Baby friendly community initiative (BFCI) to address knowledge gaps on MIYCN/IMAM.</li> </ul>	Community leaders & CHVs/CHEWs/ CHAs SCHMT & Partners
Community members lack basic information on IMAM services like eligibility criteria, ration, duration etc.;	<ul style="list-style-type: none"> <li>Creation awareness on health seeking behaviors through MSP and holistic approaches. (local admins, media)</li> <li>Sensitization of Key community leaders on basic IMAM modules</li> <li>Inclusion of key community leaders in community health and nutrition forums (Malezi bora.....)</li> </ul>	Community leaders & CHVs/CHEWs/ CHAs S/CHMT & Partners
Some hard-to-reach areas do not have outreach sites (Nomadic sites)	<ul style="list-style-type: none"> <li>Established nomadic outreach services</li> <li>Map all the nomadic stop points / migratory route</li> </ul>	SCHMT & Partners
Inadequate staff to support outreach activities and routine H/F services concurrently	<ul style="list-style-type: none"> <li>Employment of more health care workers esp. For dispensary level</li> <li>Short-term contracted health staff to support outreach services during emergencies</li> <li>Re-deployment of existing staff to facilities with inadequate staffing / high workload</li> </ul>	CHMT/County Dept. of Health & Chief Officer
High workload for the facility HCP <ul style="list-style-type: none"> <li>Unavailability of nutritionist in high volume health facilities like Sangailu HC; high no. of patients as compared to the corresponding staff.</li> </ul>		
Inadequate Health Care Workers especially the H/Fs in the most rural areas		
Health facility closed sometimes discouraging caregivers who have walked for long distances		
Lack of essential medicine at H/F and outreaches	<ul style="list-style-type: none"> <li>Strengthen medical supply chain</li> <li>County to ensure that drug are procured on regular bases</li> <li>Partner support on providing essential medicine during outreaches</li> </ul>	Facility-in-charges, KEMSA, SCHMT & Partners
Impassable roads <ul style="list-style-type: none"> <li>Due to impassable the roads, caregivers are unable to come to the clinic but by then the child had improved.</li> </ul>	<ul style="list-style-type: none"> <li>Preposition of health supplies before rainy season.</li> <li>Roll out ICCM-CMAM program and scaling FLMUAC to increase IMAM coverage at the community</li> </ul>	Facility-in-charges, KEMSA, SCHMT & Partners





Barrier	Possible recommendations	Responsible
	level.	
Long distance to the Service deliver points Long trekking distance to the SDP necessitated by outward migration	<ul style="list-style-type: none"> <li>Remapping/establishment of mobile outreaches in hard to reach areas.</li> <li>Revitalization non-functional health facilities to increase service reach.</li> </ul>	Facility-in-charges, SCHMT & Partners
Migration among nomadic pastoralist interrupts follow up of treatment to completion <ul style="list-style-type: none"> <li>Most of IMAM defaulters were nomadic pastoralist who migrate without notifying the H/F</li> </ul>	<ul style="list-style-type: none"> <li>Establish nomadic outreach services</li> <li>Map all the nomadic stop points / migratory route</li> </ul>	Facility-in-charges, SCHMT & Partners
Misuse of RUTF <ul style="list-style-type: none"> <li>Sharing of commodities</li> <li>Selling of RUTF/RUSF</li> </ul>	<ul style="list-style-type: none"> <li>Establish committees at sub-county level comprising of PHOs, nutritionists, security, community and religious representatives</li> <li>Strong legislative measures to deal with selling of nutrition/medical supplies (GOK)...arrest and prosecute.</li> <li>Addressing household food security through IGAs, GFD, CTs, protection ration.</li> <li>Health education to create more awareness on the negative effects of commodity sharing and sales.</li> </ul>	Community leaders/CHMT/ County Government
Lack of follow up of cases in IMAM program <ul style="list-style-type: none"> <li>CHVs not doing household visits and client follow up due to long distance and workload to cover</li> </ul>	<ul style="list-style-type: none"> <li>Strengthen CHS and linkages with the health facilities. Follow up/feedback mechanisms between health facilities and community.</li> </ul>	S/CHMT/Partners
Minimal screening and referral of malnourished cases by CHVs <ul style="list-style-type: none"> <li>Common in catchment populations with inactive CUs and CHVs</li> <li>The CHVs do not conduct regular screening for malnutrition due to long distance and workload to cover</li> </ul>	<ul style="list-style-type: none"> <li>Remapping of villages and recruitment of more CHVs.</li> <li>Enactment of CHS bill to ensure CHVs are motivated/supported through incentives to do their work.</li> <li>Capacity strengthening of CHVs and provision of necessary tools and equipment for their work.</li> </ul>	
Many inactive CHVs who are not motivated		
Wrong/negative reaction of some caregivers upon rejection after wrong referrals by CHVs	<ul style="list-style-type: none"> <li>Health education on IMAM programme to community members/caregivers.</li> </ul>	
Nutritionists and other HCPs not involved in CHVs review meetings	<ul style="list-style-type: none"> <li>Involve/integrate all health workers</li> </ul>	CHVs/CHAs/C



Barrier	Possible recommendations	Responsible
Nutrition program agenda not part of discussion in the CHVs review meetings	in CHVs review meetings.	HEWs/HF In-charges
Lack of referral slips: <ul style="list-style-type: none"> <li>Most referrals had no proof/slip to show that they were referred by CHV</li> </ul>	<ul style="list-style-type: none"> <li>Provision of CHVs referral tools (MOH 100) to all CHVs.</li> <li>Proper documentation/filling of referral slips (MOH 100) for further follow up feedbacks.</li> </ul>	CHVs/CHAs/C HEWs/HF In-charges
Poor perception of IMAM program; RUTE/RUSF causes diarrhea <ul style="list-style-type: none"> <li>Some cases confirmed to be discharged too early before getting cured causing relapses</li> </ul>	<ul style="list-style-type: none"> <li>Health education on the use of RUTE/RUSF and hygiene practices to reduce contamination.</li> <li>Follow treatment protocols for IMAM clients.</li> </ul>	CHVs/CHAs/C HEWs/HF In-charges
Lack of defaulter tracing strategy for the nomadic pastoralist communities <ul style="list-style-type: none"> <li>Caregivers of IMAM Absentees and defaulters never followed up</li> <li>H/F does not have a defaulter tracing mechanism</li> </ul>	<ul style="list-style-type: none"> <li>Established nomadic outreach services</li> <li>Map all the nomadic stop points / migratory route</li> </ul>	H/F-in-charges S/CHMT & Partners
Newly employed HCPs not trained on IMAM	<ul style="list-style-type: none"> <li>Train newly employed staff on IMAM modular protocol</li> </ul>	S/CHMT & Partners
Inadequate Anthropometric tools: Faulty weighing scales & height boards and lack of MUAC tapes	<ul style="list-style-type: none"> <li>Procurement and distribution of more Anthropometric tools and equipment for CHS and outreaches</li> </ul>	S/CHMT & Partners
Poor documentation <ul style="list-style-type: none"> <li>Registers and Paperwork is not up-to-date in most of the H/Fs</li> </ul>	<ul style="list-style-type: none"> <li>Training/OJTs on documentation</li> <li>Regular support supervision on documentation</li> <li>Periodic DQA and data review</li> </ul>	S/CHMT & Partners
Long queues and longer waiting time during distribution days	<ul style="list-style-type: none"> <li>IMAM services should be offered on daily basis (high volume facilities)</li> <li>Increase the frequency of distribution days to ease long waiting hours (low volume facilities)</li> </ul>	H/F-in-charges

Table 24: Table of recommendations



## APPENDICES

### Annex 1: Garissa County SQUEAC Survey Road map

FIELD ACTIVITIES - SQUEAC SURVEY IMPLEMENTATION		
TASK	Days	Dates
<b>Preparation Stage: Methodology development and field team trainings</b>		
<b>Resource Mobilization in the counties for funding and capacity Gap</b>		20 <sup>th</sup> April – 5 <sup>th</sup> May 2023
• Presentation of the ROAD MAP (Methodology) to the National SQUEAC Task-force for Review & Approval		
<b>Mobilization of the Survey Team -Training Participants</b>		
• County Staff (6 MOH Staff – 2 per Sub-County)		
• Partner Organization Staff in the county		
<b>Classroom training: Training on Quantitative and Qualitative tools</b>	3	12 <sup>th</sup> to 14 <sup>h</sup> of May, 2023
- Introductions and schedules		
- Training on SQUEAC Methodology; Methodology review		
- Training on Community Assessment		
• Local terminology and calendar		
• Development of Detailed work plan; Distribution of tasks to the assessment team		
<b>Stage One: Field data collection (Quantitative and Qualitative Data Collection)</b>		
<b>Facility (SDP) data collection: Complementary quantitative data collection and Analysis</b>	4	15 <sup>th</sup> of 18 <sup>th</sup> May 2023
• OTP and SFP data collection; Extract from SDP IMAM register		
• Routine data analysis (quantitative) ;Admission, Defaulting, LOS, Stocks and Distance perception		
<b>Field data collection: Qualitative information collection &amp; Contextual analysis</b>	6	19 <sup>th</sup> to 24 <sup>nd</sup> of May 2023
• Identification of potential Barriers and Boosters of coverage		
• Seasonal calendar Analysis		
• BBQ tool summary development		
• Development of Mind maps		
• Data Synthesis and Hypothesis Testing: preparation for Small Area Survey		
FIELD ACTIVITIES - SQUEAC SURVEY IMPLEMENTATION		
TASK	Days	Feb-23
<b>Stage Two: confirmation of Hypothesis</b>		
• Small studies, small surveys, and small-area surveys (according to hypothesis)	3	25 <sup>rd</sup> to 27 <sup>th</sup> of May, 2023
• Data analysis for Small Area Survey		
• Verification of HYPOTHESIS; Testing of hypothesis		
• Formulation of the Prior and Wide Area Survey Sampling		
• Histogram, BBQ weighted/Unweighted, concept map		
<b>PRESENTATION OF STAGE 1 &amp; 2 FINDINGS TO NATIONAL SQUEAC TASKFORCE FOR APPROVAL BEFORE MOVING TO STAGE 3</b>		
• Preparation for Wide Area Survey:	1	28 <sup>th</sup> of May, 2023
• Planning of quantitative data collection and further classroom training		



Stage Three: Conducting Wide Area Survey:		
Quantitative data collection (5 days fieldwork)	7	29 <sup>th</sup> of May to 4 <sup>th</sup> of June, 2023
Data compiling		
Estimations of Coverage (Posterior calculations)		
Recommendations		
Action plan		
Summary report		
• Presentation of Results and submission of summary report	5 <sup>th</sup> to 30 of June, 2023	
• Writing of draft report		
• Incorporation of feedback into final report		
<b>TOTAL NO. OF DAYS ; Team engagement</b>	23	Days of Field work

Annex 2: Garissa County Seasonal Calendar

Event/Condition	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23
Common Diseases: URTI	M	H	H	M	M	M	H	H	M	M	M	H
Common Diseases: Diarrhea	M	L	L	L	L	M	H	H	H	M	M	H
Common Diseases: Malnutrition	M	M	M	M	M	M	H	H	H	H	H	H
Common Diseases: Malaria	L	L	L	M	M	M	M	M	H	M	M	H
CD4: Common Diseases: Allergic, Hinitis	H	H	H	H	M	M	M	H	H	M	M	H
Common foods (maize flour, rice and beans, milk) prices	H	L	M	M	M	M	L	M	M	M	M	M
In-Migration	L	H	H	L	L	L	H	H	H	H	H	H
Out-Migration	H	H	H	H	M	M	M	M	M	M	M	M
Insecurity / clashes	L	L	L	L	R	R	R	R	L	L	R	R
Drought / famine	M	M	H	H	M	M	M	L	L	M	L	L
Key:	H-High, M-Medium, L-Low, RH-rarely/no											

Annex 3: Sample Referral Slip

**REFERRAL SLIP**

Date: \_\_\_\_\_

Child name: \_\_\_\_\_ Caretaker name: \_\_\_\_\_

Village Name: \_\_\_\_\_ Type of Program referred to: \_\_\_\_\_

Sex: \_\_\_\_\_ Age: \_\_\_\_\_ MUAC: \_\_\_\_\_

Weight: \_\_\_\_\_ Kg Height: \_\_\_\_\_ cm WHZ: \_\_\_\_\_ Oedema (Y / N)

During our coverage survey in \_\_\_\_\_, our team has screened and identified this child to





be malnourished.

In advance, we would like to thank you for giving this child necessary attention.

Comments: \_\_\_\_\_

Name of Team leader: \_\_\_\_\_

*Annex 4: Wide Area Survey Sampled Clusters*

#	Village Name	Cluster no:
1	BULLA LEBILEY	1
2	QOBOYEY	2
3	AFWAH QORAY	3
4	BULA DEYDEY	4
5	BULLA ABASS	5
6	BULLA JAMAM	6
7	BULLA SHEIKH	7
8	FAF KALALA	8
9	JHIR YARE	9
10	MOROTHILEY	10
11	UTHOLE	11
12	DIISO 2	12
13	NANIGHI	13
14	BULLA B	14
15	BULLA SALAMA	15
16	NGAMIA ROAD	16
17	ABAALA	17
18	BULA GAWAN	18
19	BULLA GURE	19
20	BULLA RAHMA	20
21	DOFAREY	21
22	GESIREB PRIMARY	22
23	HURSAN b	23
24	MUSBAREY	24
25	SHORA	25
26	BULLA DUALE A	26
27	BULLA KUNDI	27
28	BULLA WEAHA	28
29	WAKAB GARAS	29
30	DARUSALAAM	30
31	HAMADID	31
32	WAYAMA JIBRIL	32