

COVERAGE ASSESSMENT (SQUEAC) OF CMAM PROGRAMME

**UPAZILAS OF UKHIYA AND TEKNAF,
COX'S BAZAR DISTRICT, BANGLADESH**
MARCH 2019



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EXECUTIVE SUMMARY

A coverage assessment using the SQUEAC methodology was completed in the CMAM programme of Ukhiya and Teknaf in March 2019. The assessment was the third SQUEAC assessment to be completed in the upazilas. The previous two assessments were completed in 2015 and 2017.

The 2019 assessment followed the three stages of the SQUEAC methodology. Stage 1 included a context review of the CMAM programme in 2017 and 2018 and a detailed analysis of key quantitative data over time and by nutrition facility. This was complemented by a qualitative investigation to gather data from community members, nutrition facility staff and nutrition programme partners to identify negative and positive factors affecting the uptake of CMAM services. During Stage 2, hypotheses about coverage were formulated and tested in selected villages followed by a process of “prior” building by the assessment team to estimate the coverage estimates of the OTP and TSFP. Finally a wide area survey was completed and to enable the team to estimate coverage for the OTP and for TSFP (combined for Ukhiya and Teknaf).

The coverage of the OTP was estimated to be 60.9% (95% CI: 48-72.2%). The precision of this estimate was 12% which is relatively wide (inaccurate) as it was difficult to find the necessary sample size of SAM cases using MUAC and presence of oedema to identify cases. The 2017 OTP coverage estimate in Ukhiya and Teknaf was 72.5% (95% CI: 61.2-81.3%).

The coverage of the TSFP was estimated to be 49.7% (95% CI: 43.7-55.9%). The precision of the final estimate was 5% which, for a coverage estimate, is narrow (accurate). This is because the team was able to find a large sample of MAM cases during the wide area survey. The 2017 TSFP coverage estimate in Ukhiya and Teknaf was 73.1% (95% CI: 65.1-75.15%).

The reduction in the coverage of both programmes was strongly linked to the impact of the massive Rohingya influx in the upazilas in the 18 months preceding the investigation. The arrival of around 800,000 refugees and the set up and expansion of camps in Ukhiya and Teknaf affected the operation of the CMAM programme in the host communities in a number of ways.

Firstly many CNWs and CNVs who had been working in the host community left their posts during 2017 and 2018 to seek better-paid work in the camps. As such, community outreach reduced in certain unions and was still patchy at the time of the assessment. This led to a reduction in screening, which affected the coverage of the programme directly, and a reduction of sensitisations, which affected coverage indirectly.

The assessment also found that Rohingya influx significantly affected the economy and behaviours of the host community. Increased costs of transport and time required to make relatively short journeys affected the willingness of carers to make the journey to nutrition centres. In addition, nutrition products (especially WSB++) were being sold in local markets by Rohingya markets at very low prices. This further influenced the willingness of carers to spend limited funds on paying for transport to nutrition facilities, and so led to increased default rates and to low coverage of the TSFP.

However, the assessment found that regular courtyard sessions were taking place in the majority of communities visited. In these communities knowledge about the causes, symptoms and effects of malnutrition were good and most key informants knew that it was a health condition which required medical attention. Overall, there was also a very positive perception amongst community members about the CMAM programme and, despite the fact that carers often admitted to buying nutrition products from local markets, the community members understood that NT was for very sick children and WSB++ was for thin children.

During the 2015 and 2017 assessments, it was found during the qualitative assessment that key community members (including village leaders, Imams, teachers) and men were excluded from sensitisations about acute malnutrition and the programme. With some exceptions, this was still the case in many communities in Ukhiya and Teknaf in 2019. There were also concerns raised about the content of the sensitisations or the quality of delivery given that 1 in 5 cases identified during the wide area survey had previously been discharged as cured from the OTP and TSFP and had become acutely malnourished again.

During the wide area survey, the communities visited in Teknaf were found to have lower coverage overall than Ukhiya. The nutrition programme partners felt that this was because the impact of staff turnover due to the Rohingya influx had been more severe in Teknaf than Ukhiya.

The main results and analysis were shared with nutrition partners in Cox's Bazar after the completion of the assessment in March 2019. The partners defined a series of recommendations and activities to address the barriers identified during the survey. These are included in Section 5.

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Finally, thanks especially to the host communities of Ukhiya and Teknaf for willingly participating in the coverage assessment and for providing responses and explanations during data collection.

ABBREVIATIONS

APR	Annual Progress Report (of Action Against Hunger Bangladesh)
BPRM	Bureau of Population, Refugees and Migration
CC	Community clinic
CI	Confidence interval
Cin	Cases in the programme (OTP or TSFP)
CMAM	Community-based Management of Acute Malnutrition
CNC	Community Nutrition Centre
CNR	Child Non-Respondent
CNV	Community Nutrition Volunteer
CNW	Community Nutrition Worker
Cout	Cases not in the programme (OTP or TSFP)
EPI	Expanded Programme of Immunisations
FGD	Focus Group Discussion
FWC	Family Welfare Clinic
GAM	Global Acute Malnutrition
IYCF	Infant and Young Child Feeding
LQAS	Lot Quality Assurance Sampling
M3A3	Median three, Average three (method of smoothing data)
MAM	Moderate Acute Malnutrition
MNP	Micro-Nutrient Powder
MUAC	Mid-upper Arm Circumference
NGO	Non-governmental organisation
NT	Nutritional Treatment
OTP	Out-patient Treatment Programme
PLW	Pregnant or Lactating Woman
Rin	A recovering case (i.e. a case that was SAM/MAM but who is still in the OTP/TSFP programme as they have not yet reached discharge criteria)
Rout	A Recovering case not in the programme (i.e. a case that has recovered from SAM / MAM without being admitted to an OTP/TSFP)
SAM	Severe Acute Malnutrition
SARPV	Social Assistance and Rehabilitation for the Physically Vulnerable
SHED	Social Health and Education Development
SMART	Standardised Monitoring and Assessment of Relief and Transitions
SQUEAC	Semi-quantitative Evaluation of Access and Coverage
SSI	Semi Structured Interview
TSFP	Therapeutic Supplementary Feeding Programme
UH	Upazila Hospital
UHSC	Union Health Sub-Centre
WFP	World Food Programme
WN	A well-nourished child
WSB	Wheat Soya Blend

1. CONTEXT

1.1. OVERVIEW

Cox's Bazar District in southern Bangladesh is one of the most disaster prone coastal districts of Bangladesh. Containing eight upazilas, the total area of the district is 2,492 square kilometres. It is surrounded by Chittagong district to the north, the Bay of Bengal on the south and west and Bandarban district and Arakan (Myanmar) to the east.

Located on the shores of the Bay of Bengal and with many of the coastal areas lying less than 3 metres above sea level, the district is highly vulnerable to tropical cyclones, tidal surges and flooding, particularly during the cyclone season in May to July each year. The frequent natural disasters in the district damage infrastructure and often destroy the economic assets of the densely populated, poor rural population. Many communities have a low socio-economic status and so are especially vulnerable to weather shocks.

To add to the delicate context of the Bangla rural communities, Rohingya refugees are hosted in the district in registered and makeshift camps and in the host community in the upazilas of Ukhiya and Teknaf. A small population (approximately 70,000) of the refugees had been living in the district since the 1990's. However in August 2017, extreme violence in Rakhine State, Myanmar, forced an additional 800,000 refugees across the border. Makeshift camps were established in and around the existing registered camps to house the new arrivals. By early 2019, the total population of refugees was estimated to be more than 950,000.

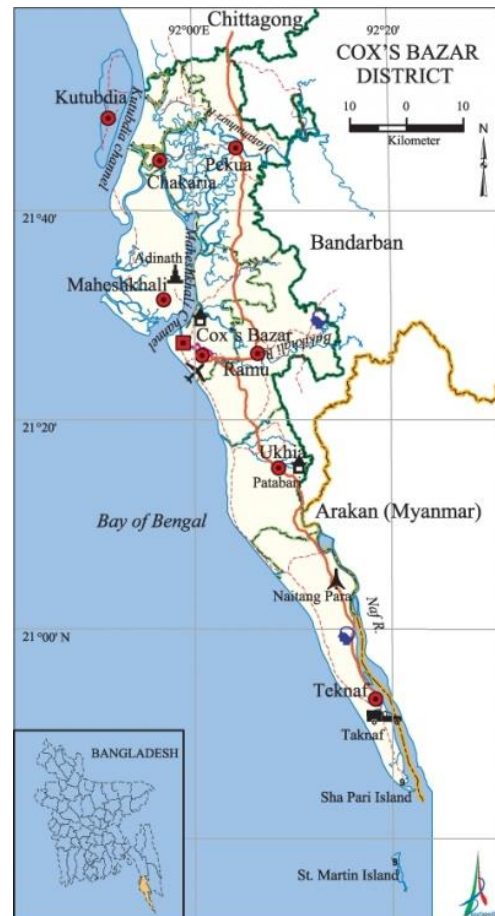


Figure 1: Map of Cox's Bazar district, Bangladesh

1.2. UKHIYA AND TEKNAF UPAZILAS: POPULATION AND ADMINISTRATIVE AREAS

Ukhiya and Teknaf upazilas are the southernmost upazilas in the district lying approximately 30km (Ukhiya) and 50km (Teknaf) south of Cox's Bazar town. Based on extrapolated population figures from 2011, in 2018 the two upazilas had a combined population of approximately 565,000 (not including refugee populations); of which 253,322 were in Ukhiya and 311,788 in Teknaf. The two upazilas contained 11 unions and 207 villages in total. The average household size was 5.3 and percentage of children

aged less than 5 years 15.1%. Table 1 summarises the population and administrative areas in the two upazilas.

Table 1: Ukhiya and Teknaf upazilas, details of administrative areas with population

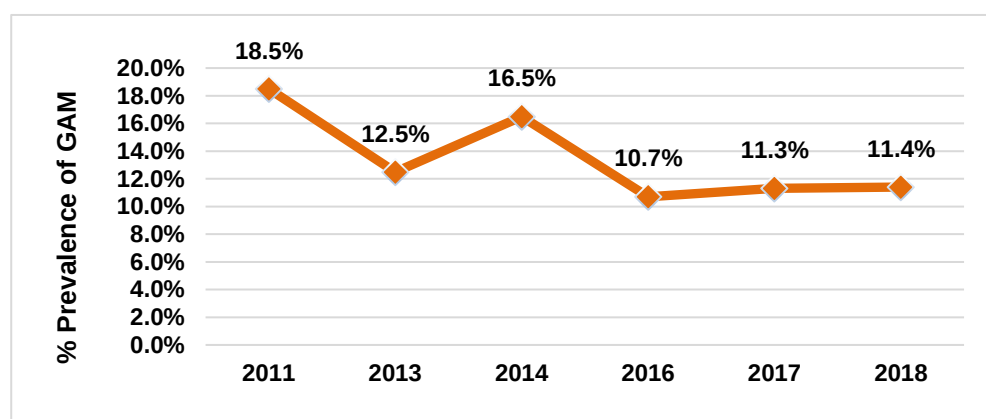
Name of Upazila	Union	Village	Total Population (BBS 2011)	Projected Population as of 2018 ¹	Total U5 Children ²	Total Children 6-59 months old ³
Ukhiya	5	54	207,379	253,322	38,252	34,426
Teknaf	6	153	257,686	311,788	47,080	42,372
Total	11	207	465,065	565,110	85,332	76,798

1.3. UKHIYA AND TEKNAF UPAZILAS: NUTRITION SITUATION

An Integrated Nutrition SMART survey was conducted in Ukhiya and Teknaf Upazilas in February 2018. The results indicated that, based on weight-for-height Z-score (WHZ), Global Acute Malnutrition (GAM) was 11.4% (8.9 - 14.5 95% C.I) and Severe Acute Malnutrition (SAM) rate was 1.5% (0.8 - 3.1 95% C.I.) in both Upazilas. According to the WHO emergency thresholds, GAM rates were therefore at a “serious” level. During the same survey, the prevalence of GAM by MUAC was found to be 3.8% (2.5 - 5.7 95% C.I.) and 0.3 % (0.1-1.4 95% C.I.) of SAM for both Upazilas.

The 2018 survey was carried out as a follow up to past surveys. The overall malnutrition rates were static in 2018 compared to 2017. However, GAM rates were higher in 2011, 2013 and 2014. The data collection in 2014 was done during peak harvest of rice and vegetables in November whereas the data collection for the 2015, 2016 and 2017 survey were done during post-harvest period in January 2016. Figure 1 summarises the GAM trends between 2011 and 2018.

Figure 1: Trends of Global Acute Malnutrition Prevalence from 2011 to 2018, SMART surveys, Ukhiya and Teknaf Upazilas



¹ Population and U5 children are projected as of 2018 with annual growth rate (Ukhiya-2.9, Teknaf- 2.76: BBS 2011) and percentage of U5 (15.1% - SMART survey 2018)

² Percentage of U5 children (15.1% - SMART survey 2018)

³ Representing 90 % of U5 population

1.4. NUTRITION SERVICES

Action Against Hunger Bangladesh has been working with the Government of Bangladesh, the World Food Programme (WFP), Social Health and Education Development (SHED) and Social Assistance and Rehabilitation for the Physically Vulnerable (SARPV) to tackle the high rates of malnutrition in the two upazilas since 2012. This has been done through the implementation of CMAM programmes in 50 Community Nutrition Centres (CNC)⁴ (22 in Ukhiya and 28 in Teknaf).

The support provided by the Action Against Hunger and WFP teams currently involves the following activities:

- Screening, detection and referral of severely and moderately acute malnourished children under 5 years and pregnant and lactating women
- In-patient management of severe acute malnutrition with complications through stabilisation centres in 2 upazila health facilities.
- Out-patient management of acutely malnourished children and pregnant and lactating women's through community nutrition centres.
- Community nutrition education and awareness raising program through male and female forums, meetings with community clinic management committee and community support groups, Infant and Young Child Feeding (IYCF) practices counselling through community mobilizers, community nutrition workers, community nutrition volunteers and model mothers.
- School nutrition education sessions through trained teachers & nutrition promoters.
- Micro-Nutrient Powder (MNP) distribution among children aged 6-59 months children through model mothers.

1.5. PREVIOUS COVERAGE ASSESSMENTS

Two coverage assessments have been completed previously by the Action Against Hunger teams (with support from WFP and SHED) using the SQUEAC⁵ methodology in order to estimate the coverage of CMAM services.

The first assessment was completed in 2015 and the second in 2017; the results are shown in Table 2. Both assessments found the coverage of both OTP and TSFP treatment in the two upazilas to be high (the Sphere standard for treatment coverage in rural areas is 50%).

Table 2: Previous treatment coverage estimates, Ukhiya and Teknaf Upazilas

	OTP coverage	TSFP coverage
Sept-Oct 2015	69.4% (95% CI 60.2-77.3%)	70.2% (95% CI 65.1-75.2%)
May-June 2017	72.5 % (95% CI 61.2- 81.3%)	73.1 % (95% CI 67.1- 78.3%)

⁴ The CMAM programme is delivered from a range of union level health structures including Community Clinics (CC), Community Nutrition Clinics, Union Health and Family Welfare Clinics (UH+FWC), Union Health Sub Centres (UHSC) and Enhanced Programme of Immunisation (EPI) centres. For this report, Community Nutrition Centre (CNC) will include all structures which deliver the CMAM programme

⁵ Semi-Quantitative Evaluation of Access and Coverage

1.6. 2019 COVERAGE ASSESSMENT

This report outlines the methodology and findings of a follow up SQUEAC assessment in Ukhiya and Teknaf Upazilas which took place during March 2019. The objectives of the assessment were as follows:

- To determine the treatment coverage for SAM through the community-based OTP program
- To determine the treatment coverage for MAM through the community-based SFP program
- To estimate the impact of the treatment programs (i.e. met need for SAM and MAM treatment)
- To identify barriers and boosters that are relevant to coverage of the programmes (including those that are relevant to both programmes and those that are relevant to both separately)
- To develop recommendations and an action plan for future programming

2. METHODOLOGY

2.1. OVERVIEW OF SQUEAC

The SQUEAC assessment methodology was used to achieve the assessment objectives.

SQUEAC assessments are designed to uncover the truth about the treatment coverage of acute malnutrition programmes. Acute malnutrition (especially SAM) is a rare condition in children aged 6-59 months. With prevalence rates of severe acute malnutrition rarely exceeding 1%, it can therefore be difficult and resource intensive to find a sufficiently large sample of acutely malnourished children to be able to estimate the coverage of services with an acceptable confidence interval using survey data alone.

The SQUEAC methodology enables assessment teams to use some survey data as well as other data collected and analysed in an intelligent and iterative manner to estimate coverage with a credibility range of 10-15%.

An added advantage of the method is that it enables the assessment team to collect detailed qualitative data relating to the main positive and negative factors affecting coverage. This data facilitates the elaboration of corrective actions for the programme to implement to improve service uptake and the acceptance of the programme.

2.2. SQUEAC METHODOLOGY

On account of the fact that SQUEAC assessments had been completed in the upazilas of Ukhiya and Teknaf previously, the assessment process was adapted slightly from a regular “baseline” SQUEAC. However the assessment followed the standard SQUEAC process.

Training and data analysis - day 1

The core team (a list of assessment participants is in Annex 1) was trained on the key steps of the SQUEAC methodology.

They also conducted a context and supply review in order to identify how coverage may have changed in the period since the last assessment (May 2017). To do this, the team split into two groups:

- One group discussed and identified contextual changes in the two upazilas
- One group discussed supply-related factors of the CMAM programme

Both teams presented the factors to other participants and suggested how the factors may have affected coverage.

Training and data analysis - day 2

The core team conducted a detailed analysis of quantitative data from the OTP and TSFP programmes in Ukhiya and Teknaf. The purpose of this analysis was to:

- Attempt to identify and explain trends in the evolution of programme data over time
- To identify potential high and low coverage community clinics
- To identify areas for further investigation during the qualitative data investigation

Key observations were summarised and noted on flipcharts in the training room.

Based on the context, supply and quantitative data analysis, the core team members then predicted how they believed coverage had evolved since the previous SQUEAC survey. This process enabled them to estimate the “prior” prior. The purpose of this process is described in the “Stage 2: Prior building process” below.

The assessment then followed the three stages of the SQUEAC methodology.

Stage 1: collection and analysis of qualitative information from communities and CNCs in the two upazilas

The primary purpose of this stage was to determine, based on the information collected during interviews and focus group discussions, the extent to which the key negative and positive factors affecting coverage have evolved since the last coverage assessment and to identify new factors likely to affect coverage.

Six data collection teams conducted 73 semi-structured interviews and focus group discussions during four days. 21 different types of key informant were interviewed during this time. Table 3 summarises the number of semi-structured interviews and focus group discussions by key informant and by upazila.

The data collection teams used five interview guides to complete the data collection. The questions in each interview guide were relevant to the key informant/s being interviewed.

The first day of data collection also served as a field test and was conducted in various unions in Ukhiya. At the end of the day, the teams came back together to discuss challenges encountered and to adapt their approaches and interview guides for the subsequent days of data collection.

Table 3: Summary of key informants

Type of key informant	Key informant	Ukhiya	Teknaf	Total
Community health workers	Community Nutrition Volunteer	4	2	6
	Community Nutrition Worker	3	3	6
	Model Mother	1	1	2
SAM / MAM carers	MAM carers	5	2	7
	SAM carers	3	4	7
Community members	Female community members	3	2	5
	Male community members	3	2	5
Key community members	Village leader	2	1	3
	Imam	1	1	2
	Traditional healer	1	1	2
	Traditional birth attendant	1	1	2
	Village doctor	2	1	3
	Pharmacist	2	2	4
	Teacher	2	1	3
Health centre staff	Community Health Care Practitioner	6	2	8
	Health Assistance	1	1	2
	Family Welfare Assistant	0	1	1
	Stabilisation Centre Nurse	0	1	1
	Family Welfare Volunteer	1	0	1
	SACMO	0	1	1
Coordination staff	Union Nutrition Supervisor	1	1	2
TOTAL		42	31	73

At the end of each day of data collection, the core team members collected the completed interview guides and reviewed the responses to identify positive and negative factors affecting coverage. Each factor was then added to one of five themed flipcharts along with the “triangulation” information (including method of data collection, key informant and location information). If the same (or similar) factor had been noted previously, the core team added the triangulation information to the factor.

The five themes included:

- Awareness and understanding of malnutrition
- Awareness and understanding of CMAM programme
- Outreach activities (including screening, sensitisation and follow up)
- Quality of care in nutrition facilities
- Other factors (e.g. access and time related factors)

The data collection teams were also tasked with collecting a series of case studies of children who had defaulted or had been discharged as “child non-respondent” (CNR) from the OTP or TSFP. This information was compiled by core team members in case study templates. A total of 8 CNR case studies and 8 defaulter case studies were collected.

Stage 2: Hypothesis testing

Using the information collected during the qualitative and quantitative data collection, the assessment team elaborated two hypotheses about coverage which they tested during Stage 2.

The first hypothesis tested distance. The hypothesis set out that:

1. Villages located less than 5km from CNCs would have coverage greater than 60%
2. Villages located more than 5km from CNCs would have coverage less than 60%

To test this hypothesis, 2 villages less than 5km from CNCs were selected (one in Ukhiya and one in Teknaf) and 2 villages more than 5km from CNCs were selected (one in Teknaf and one in Ukhiya). In each village, exhaustive case finding was completed to identify all SAM and MAM cases and/or cases attending the CMAM programme (more information about case finding is detailed in Stage 3: Wide area survey).

The second hypothesis tested CNV workload. The hypothesis set out that:

1. In CNCs where CNVs are responsible for sensitising and screening less than 65 clusters (low CNV workload), coverage would be greater than 60%
2. In CNCs where CNVs are responsible for sensitising and screening more than 65 clusters (high CNV workload), coverage would be less than 60%

To test this hypothesis three CNCs with low CNV workload were selected (2 in Teknaf and 1 in Ukhiya) and three CNC's with high CNV workload were selected (2 in Teknaf and 1 in Ukhiya). In each CNC a village was selected which was located from 2-5km from the CNC with an approximate population of 1000 to 2500 (in Teknaf) and of 5500 to 8000 in Ukhiya (where village populations were generally higher than Teknaf).

In each village, exhaustive case finding was completed to identify all SAM and MAM cases and/or cases attending the CMAM programme (more information about case finding is detailed below in Stage 3: Wide area survey).

The results were then analysed using the Lot Quality Assurance Sampling (LQAS) classification technique. This involves examining the number of cases found (n) and the number of covered cases found:

- If the number of covered cases found exceeds a threshold value (d) then coverage is classified as being satisfactory (i.e., coverage meets or exceeds the standard).
- If the number of covered cases found does not exceed this threshold value (d) then coverage is classified as being unsatisfactory (i.e., coverage does not meet or exceed the standard).

The threshold value (d) depends on the number of cases found (n) and the standard (p) against which coverage is being evaluated. For the tests conducted in Ukhiya and Teknaf, the standard chosen was 60% (based on previous assessment results).

The decision value was calculated using the following formula:

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

The findings from these tests were then analysed and added as either positive or negative factors to the other findings of the Stage 1 investigation.

Stage 2: Prior building

All positive and negative factors identified during Stage 1 and 2 were consolidated and grouped into a list of barriers (negative factors) and boosters (positive factors). The triangulation information of each factor (for method, key informant and location) was also combined into the lists of barriers and boosters. To simplify the process, “groups” of key informants were created and location information was as either Teknaf or Ukhiya.

The core team were then divided into four teams. Each team was asked to score each barrier and booster on a scale of 1 to 4 based on their perception of the impact that each factor had on coverage across the assessment area and the extent to which that factor had been triangulated. The average of each of the proposed weights was recorded as the weight for the factor.

With the barrier and booster lists finalised, the assessment team then conducted prior building. The purpose of prior building is to use assessment data to estimate the coverage of the CMAM programme (of both OTP and TSFP in the case of Ukhiya and Teknaf).

Five prior building methods were used to calculate the OTP and TSFP prior beliefs. The methods used are summarised in Table 4.

Table 4: Prior contributing elements used in elaboration of OTP and TSFP priors

Prior contributing element	Description
“Prior” prior	- Each of the core team estimated new coverage estimates for OTP and TSFP based on updated context and supply analysis and on quantitative data analysis. - Median value of proposed estimates recorded as “prior” prior
Simple barriers and boosters	- Each barrier and booster was assigned a score of 4 - Barriers and boosters (for OTP and TSFP) were totalled
Weighted barriers and boosters	- Each barrier and booster was assigned a weighted score using the method described above - Barriers and boosters (for OTP and TSFP) were totalled
Concept map	- Two concept maps were drawn; one showing links between positive factors and one showing links between negative factors - The positive links and the negative links were totalled
Mind map	- All positive factors identified during Stage 1 were marked with a green tick. - All negative factors were marked with a red cross. - The positive and negative factors were totalled separately

The prior estimates for all of the methods apart from the first method were calculated using the following formula:

$$\text{Prior estimate} = \frac{(100 - \text{negative factor total}) + (0 + \text{positive factor total})}{2} \times 100$$

The average of the five prior estimates were then calculated to find the prior mode for OTP and TSFP.

During the final step of the prior building process, the core team estimated minimum and maximum probable values of the OTP and TSFP prior modes. This was done using the histogram method for the TSFP prior values and a fixed range for the OTP prior values.

The histogram prior process is described in detail on pages 79-80 of the SQUEAC technical reference⁶. By following the process, an investigation team estimate the lowest and highest probable coverage values.

The histogram method was initially used for the OTP minimum and maximum value estimation. However the values estimated by the team resulted in a relatively narrow range which would have required a very large sample size for Stage 3 to be able to complete the conjugate analysis. Therefore the team decided to use a fixed range of +/- 25% to calculate the OTP prior minimum and maximum probable values.

The prior modes and minimum and maximum probable values were then used to calculate Alpha and Beta priors in order to plot the OTP and TSFP probability curves on the Bayes calculator. The calculations for these are shown on page 81 of the SQUEAC technical reference⁷. The Ukhiya and Teknaf investigation team used a pre-designed excel-based calculator to calculate the Alpha and Beta priors. Once entered to the Bayes calculator, the desired precision of the final estimates was entered into the Bayes calculator to calculate the required sample sizes of SAM and MAM cases for the wide area survey during Stage 3.

Stage 3: Wide area survey

A wide-area survey in Ukhiya and Teknaf upazilas was completed to identify a necessary sample size of active SAM and MAM cases and cases that were SAM / MAM but who have not yet been discharged as cured from the programme.

Calculation of the number of villages to visit: The coordination team first calculated how many villages would need to be visited to reach the minimum sample size for the OTP required sample size. When conducting an investigation of OTP and TSFP coverage during the same investigation, data collection is planned based on needing to find the OTP sample size. As SAM is a much rarer condition than MAM, data collection teams will exceed the MAM sample size if they base their planning on the OTP sample size.

To calculate the number of villages to visit to reach the required sample size, the following calculation is used:

$$\frac{\text{Required OTP sample size}}{\text{Average village population} \times \text{Percentage of children aged 6 to 59 months} \times \text{SAM prevalence}}$$

The survey team calculated the number of villages to visit based on the combined population figures (565,100) and the number of listed villages (207) in the two upazilas. The average village population using this data was calculated to be 2730 per village. The SAM prevalence by MUAC was estimated to be 0.5% at the time of the investigation and the percentage of the population aged 6-59 months was estimated to be 12%. These figures were based on the most recent nutritional survey (SMART survey in Ukhiya and Teknaf, March 2018) and on recent screening and admissions figures.

⁶ The technical reference for the methodology is available here: <http://www.coverage-monitoring.org/wp-content/uploads/2014/10/SQUEAC-SLEAC-Technical-Reference-Oct2012.pdf>

⁷ Idem

Using these figures, the calculation estimated that 20 villages would need to be visited to reach the required sample size.

However, given that the village populations were very large, it would be very difficult for one team to sample an entire village in one day. Furthermore during SQUEAC wide area surveys it is preferable to visit at least 25 villages in a survey area in order to achieve more spatially representative coverage results.

Therefore the team adjusted the average village size to 1800 which was the estimated population that could be sampled by one team in one day. This increased the villages to visit to 30 villages.

Village selection: The 30 villages were selected using a spatially stratified sampling method.

To do this the villages in both upazilas were arranged alphabetically, first by upazila, then by union, then by village name. Once arranged like this they were numbered from 1 to 207. A sampling interval was calculated by dividing 207 by 30. Then, starting with a random number at the top of the list (between 1 and the sampling interval), the sampling interval was applied until 30 villages had been selected. As there were a greater number of villages in Teknaf on the list than Ukhiya, more villages were selected in Teknaf. In total 7 villages were selected in Ukhiya and 23 in Teknaf. The selected villages are listed in Annex 5.

Case finding: In-community sampling took place in the 30 selected villages with the aim of finding all cases (in line with the “case definitions”) in the villages. The case definition included:

Children aged 6-59 months who are SAM or MAM or who are in the OTP or TSFP

Teams used door-to-door sampling to locate cases, in addition to asking carers and community members if they knew of children who were in the CMAM programme (using cultural appropriate terms in Bangla) or who were “leda” (thin). The measurements of all children were recorded on a summary sheet along with their classification. The classifications included:

- SAM Cin SAM cases in the OTP
- SAM Cout SAM cases not in the OTP
- SAM Rin Cases who are still in the OTP but who are no longer SAM
- MAM Cin MAM cases in the TSFP
- MAM Cout MAM cases not in the TSFP
- MAM Rin Cases who are still in the TSFP but who are no longer MAM
- WN Well-nourished cases who are in neither the OTP or TSFP

If a case was identified, the investigation team administered a questionnaire using tablets and KoboCollect software. At the end of each day, the results were compiled per village and then reported to the coordination team. The questionnaires were also cross checked and submitted to the Kobo server when the data collection teams returned to Cox’s Bazar town.

Estimating coverage

The most reliable, and widely suited, coverage estimator is the single coverage estimator⁸ and should be used for estimating both OTP and TSFP coverage. The estimator estimates coverage using active SAM/MAM cases as well as recovering cases and recovering cases NOT in the programme. The following formula is used where C_{in} = covered SAM/MAM cases, C_{out} = uncovered SAM/MAM cases, R_{in} = recovering cases in the programme and R_{out} = recovering cases not in the programme:

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

The C_{in} , C_{out} and R_{in} are all collected during the wide-area survey however R_{out} must be estimated using the following formula:

$$R_{out} \cong \frac{1}{3} \times (R_{in} \times \frac{C_{in} + C_{out} + 1}{C_{in} + 1} - R_{in})$$

At the conclusion of the wide area survey, the single coverage Numerator ($C_{in}+R_{in}$) and Denominator ($C_{in}+R_{in}+C_{out}+R_{out}$) for the OTP and TSFP were added to the Bayes calculator and combined with the prior beliefs of OTP and TSFP coverage to find the overall coverage estimates for the OTP and TSFP.

Calculating Met need

A final calculation was complete to estimate the “Met need” of the OTP and TSFP in 2018. The Met Need combines the treatment coverage of the programme along with the latest cure rate to provide an estimate of the extent to which the programme is meeting the needs of the target population.

To calculate the Met Need, the following calculation is applied:

$$\text{Met Need} = \text{Coverage estimate} \times \text{Average cure rate from defined period}$$

In the case of this SQUEAC investigation, 2018 was the defined period for the calculation of the cure rate.

Recommendations

The results of the survey were presented to partners in Cox's Bazar and recommendations and activities were elaborated in order to improve the service uptake of the programmes.

⁸ For more information see Myatt, M et al, (2015) *A single coverage estimator for use in SQUEAC, SLEAC, and other CMAM coverage assessments*, p.81 Field Exchange 49.

3. RESULTS

3.1. CONTEXT AND SUPPLY REVIEW

The results from the context and supply review conducted by the core team on the first day of the SQUEAC assessment indicated how contextual and programme related changes in 2017 + 2018 potentially affected coverage. These are summarised on Table 5 and are relevant for both the OTP and TSFP. Positive changes are indicated with a **P** and negative changes are indicated with an **N**.

Table 5: Supply review

Determinant	How is factor changed in last 2 years?	How is this likely to have affected coverage?	Location
Operation of programme	Increased regular protests by communities	Reduced regular activities of programme (N)	Both upazilas
	Increased funding for host community programme following Rohingya influx	New CNC opened in remote community	Ukhiya
Stock availability	No major stock breaks for nutrition treatment products (apart from immediately after Rohingya influx in 2017)	Overall positive impact on coverage (P)	Supply challenges encountered in Palongkhali union due to heavy traffic and poor roads hamper access Shalporir dip
CNC staff and volunteer availability	Reduced availability of newly qualified staff as most new staff go to camps	Fewer newly trained staff available and willing to fill vacancies in CNCs (N)	Both upazilas
	Increased turnover of staff and volunteers and higher pay and incentives available in camps	Shortage of trained staff and volunteers and increase in demand for higher pay and incentives has reduced outreach activities (N)	Both upazilas
Sensitisations	Other organisations in host community conducting outreach work and offering monetary and non-monetary incentives	Reduced attendance of sensitisations due to lack of incentives offered during CMAM sensitisations (N)	Both upazilas
Accessibility	Increased traffic and deterioration of roads due to Rohingya influx	Delayed staff movement has led to decreased screening and monitoring (N)	Both upazilas affected – but more severe in Ukhiya
	Increased incidence of crime due to Rohingya influx led to poorer household and community security	Reluctance of carers to travel to CNCs due to insecurity (N)	Both upazilas (but GoB conducting more anti-crime operations in Teknaf)

3.2. QUANTITATIVE DATA ANALYSIS

3.2.1. INTRODUCTION

This section presents some of the quantitative data from the CMAM programme in Ukhiya and Teknaf during the 24 months leading up to March 2019 and summarises the key observations from the analysis. Quantitative data from both the OTP and the TSFP are analysed together. Where relevant, separate observations are made for Ukhiya and Teknaf.

- Admissions data is analysed first and includes admissions over time, admissions by CNC, the timeliness of admissions and referral sources.
- This is followed by a defaulter analysis including defaulters over time and by CNC, MUAC and length of stay before default and analysis of the defaulter case studies.
- Finally discharge data is analysed including analyses of discharges over time and by CNC and length of stay before cure.

3.2.2. ADMISSIONS DATA

How did admissions change over time between January 2017 and January 2019? What were the possible reasons for the changes?

A summary of total admissions to the OTP in Ukhiya and Teknaf is shown in Table 6.

Table 6: Summary of all admissions 2017 + 2018, Ukhiya and Teknaf OTP

	Ukhiya	Teknaf	Total
2017	475	740	1215
2018	381	662	1043
Total	856	1401	2258

TSFP admissions in both upazilas are shown in Table 7.

Table 7: Summary of all admissions 2017 + 2018, Ukhiya and Teknaf TSFP

	Ukhiya	Teknaf	Total
2017	4057	3741	7798
2018	3099	4243	7342
Total	7156	7984	15140

Overall, admissions for both OTP and TSFP, admissions in 2018 were slightly lower compared to 2017. The only exception is that admissions increased in Teknaf in 2018 compared to 2017.

Admissions are also shown month-by-month in Figures 3 and 4 from January 2017 to January 2019. Both charts include the seasonal and events calendar for the district of Cox's Bazar for 2017 and 2018. Both charts indicate that there was a peak in admissions in October 2017. This coincides with the peak period of arrival of Rohingya refugees. For the OTP, the peak in admissions was seen in Teknaf (mostly in Leda CC) whilst for the TSFP, the peak was in Ukhiya (mostly in Balukhali CC). The primary reason for the peaks in admissions during this time was the influx of Rohingya refugees from August 2017 to January 2018. During and after the influx, OTPs and TSFPs in the newly established makeshift camps were not set up. As such many refugee SAM cases had to go to host community CNCs.

The line graph displays monthly admissions for four categories: Total admissions Ukhiya (solid blue line), M3A3 (Ukhiya) (dashed blue line), Total admissions Teknaf (solid green line), and M3A3 (Teknaf) (dashed green line). The Y-axis represents the number of admissions, ranging from 0 to 100. The X-axis shows months from Jan-17 to Jan-19. Total admissions Teknaf shows the highest peaks, reaching over 90 in late 2017 and over 70 in late 2018. Total admissions Ukhiya shows significant fluctuations, with peaks around 65 in early 2017 and 55 in mid-2018. M3A3 (Ukhiya) and M3A3 (Teknaf) generally follow the trends of their respective total admissions but at lower levels.

Month	Total admissions Ukhiya	M3A3 (Ukhiya)	Total admissions Teknaf	M3A3 (Teknaf)
Jan-17	40	57	74	62
Feb-17	67	58	58	58
Mar-17	60	55	46	46
Apr-17	42	48	46	46
May-17	38	45	51	48
Jun-17	38	45	43	52
Jul-17	38	45	70	58
Aug-17	34	40	62	60
Sep-17	45	41	56	65
Oct-17	43	35	93	79
Nov-17	20	30	88	78
Dec-17	12	19	54	65
Jan-18	36	20	59	56
Feb-18	15	21	55	54
Mar-18	25	24	47	52
Apr-18	35	24	62	48
May-18	18	24	35	41
Jun-18	24	24	38	42
Jul-18	55	30	63	48
Aug-18	16	35	51	52
Sep-18	42	41	56	55
Oct-18	49	38	74	60
Nov-18	33	35	53	60
Dec-18	34	34	69	60
Jan-19	37	35	49	57

Major events in Cox's Bazar:

- Influx of Rohingya refugees (Jan-17 to Sep-17)
- Staff and volunteer shortages in host community CMAM programmes (Oct-17 to Sep-18)

Seasonal variations of hunger and under-nutrition in the community, considering:

- Hunger gap: High (Jan-17 to Mar-17), Medium (Apr-17 to Jun-17), High (Jul-17 to Sep-17), High (Oct-17 to Dec-17), High (Jan-18 to Mar-18), Medium (Apr-18 to Jun-18), High (Jul-18 to Sep-18)
- Periods of high acute malnutrition prevalence: High (Jan-17 to Mar-17), High (Apr-17 to Jun-17), High (Jul-17 to Sep-17), High (Oct-17 to Dec-17), High (Jan-18 to Mar-18), High (Apr-18 to Jun-18), High (Jul-18 to Sep-18)

Characteristics of each season:

- Rainy season: Monsoon rains (Jun-17 to Sep-17), Monsoon rains (Jun-18 to Sep-18)
- Cyclones: Storm, cyclone (Mar-17 to May-17), Cyclone (Oct-17 to Dec-17), Storm, cyclone (Mar-18 to May-18), Cyclone (Oct-18 to Dec-18)
- Temperature: Cold (Jan-17 to Feb-17), Hot (Mar-17 to May-17), Cold (Oct-17 to Dec-17), Hot (Mar-18 to May-18), Cold (Oct-18 to Dec-18)

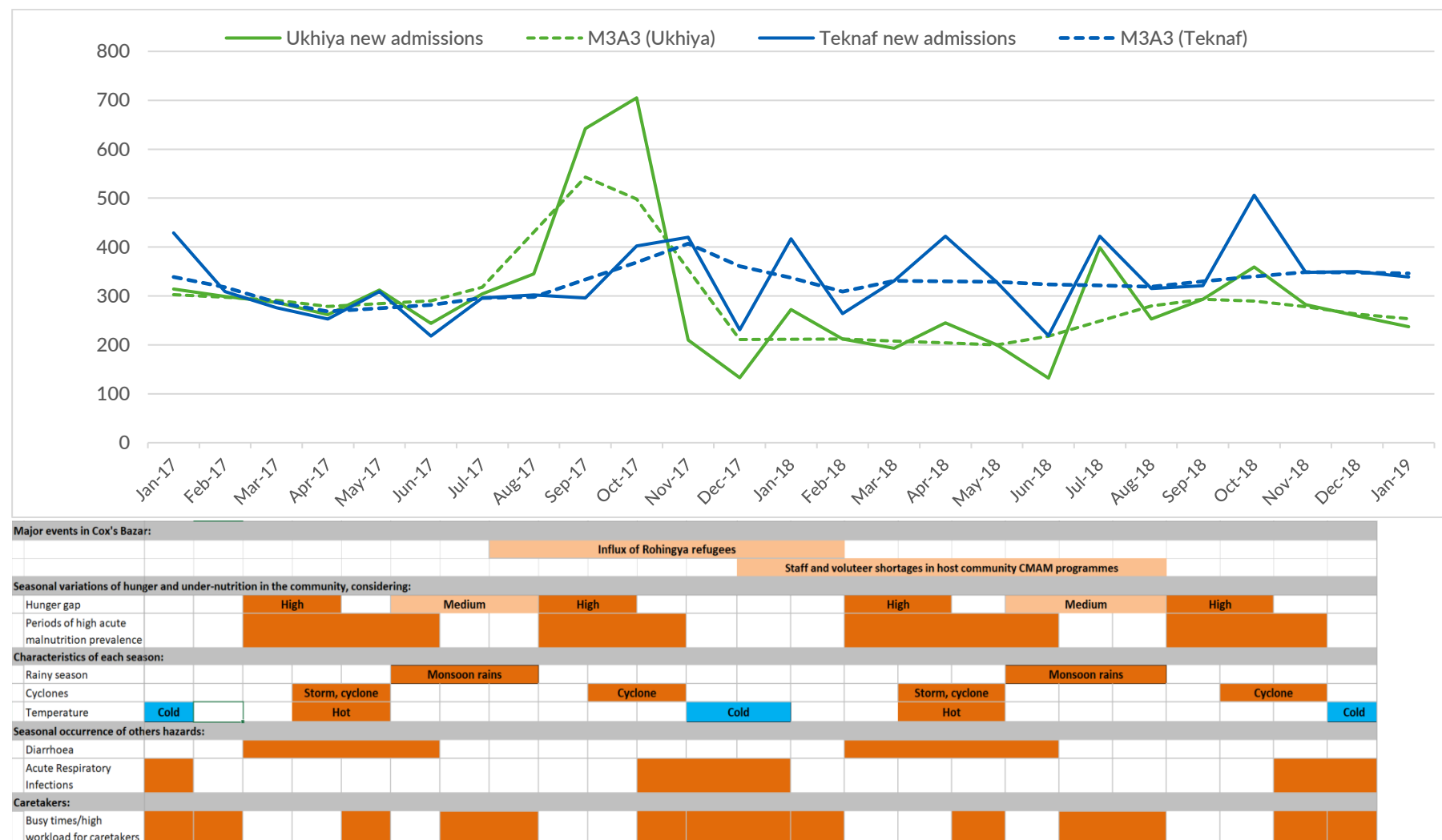
Seasonal occurrence of others hazards:

- Diarrhoea: High (Jan-17 to Mar-17), High (Jul-17 to Sep-17), High (Oct-17 to Dec-17), High (Jan-18 to Mar-18), High (Apr-18 to Jun-18)
- Acute Respiratory Infections: High (Jan-17 to Mar-17), High (Jul-17 to Sep-17), High (Oct-17 to Dec-17), High (Jan-18 to Mar-18), High (Apr-18 to Jun-18)

Caretakers:

- Busy times/high workload for caretakers: High (Jan-17 to Mar-17), High (Jul-17 to Sep-17), High (Oct-17 to Dec-17), High (Jan-18 to Mar-18), High (Apr-18 to Jun-18)

Figure 4: Admissions over time, Ukhiya and Teknaf TSFP, January 2017 to January 2019 (M3A3 indicates smoothed data)



The drop in admissions in both programmes in mid-2018 can be explained by the staff shortages experienced by many CNCs following the Rohingya influx (when many CNWs and CNVs left their posts to find higher paid work in the camps).

In the OTP, by the end of 2018, admissions in Teknaf had recovered to levels similar to the same period in 2017. However Ukhiya admissions in late 2018 remained below 2017 admissions (average 35 admissions per month compared to 55 admissions per month) suggesting that the impact of staff shortage was more severe in Ukhiya than in Teknaf. TSFP admissions were also lower in Ukhiya in 2018 compared to 2017 with average monthly admissions rarely exceeding an average of 300 admissions per month.

Throughout 2018 in both upazilas there were notable peaks and troughs in admissions of OTP and TSFP from one month to the next. This can also be linked to the staff shortages experienced during the year. Some months (e.g. April, July and October) saw peaks after recruitment of new CNVs followed by drops in admissions during the following month when there were fewer active cases in the community.

Finally, both charts indicate that seasonal weather events and heavy workload periods did not lead to significant changes in admissions of either programmes over the course of 2017 or 2018. This is similar to the pattern of admissions over time analysed during the previous surveys in 2015 and 2017. There seems to have been a slight rise in OTP admissions in late 2018 which may be linked to an increased prevalence of acute malnutrition (and the improved accessibility compared to the monsoon season). However it could also have been caused by the availability of newly trained CNVs during this time.

Where were most SAM and MAM cases admitted? Where were least SAM and MAM cases admitted? Why?

Reviewing admissions by CNC can indicate if treatment coverage is higher or lower than expected in the CNC. Assuming that the proportion of children under 5 and the prevalence of acute malnutrition were consistent throughout all catchment areas in Ukhiya and Teknaf in 2018, one can assume that the percentage of total admissions to a CNC would be similar to the percentage of the total population in a CNC catchment area. If there is a discrepancy, for example if percentage of admissions to a CNC were much lower than the percentage of population in the catchment area, this could indicate that coverage is low in that particular catchment area.

Therefore during the training, the core team analysed OTP and TSFP admissions by CNC for the 13 months prior to the survey (January 2018-January 2019). They were able to identify CNCs that had higher than expected admissions and CNCs with lower than expected admissions. These CNCs were then visited by teams during the qualitative data collection phase in order to investigate why admissions were particularly high or low.

Figures 5 and 6 compare the percentage of OTP and TSFP admissions by CNC (from January 2018 to January 2019) with the percentage of the relevant upazila's population that lived in the CNC's catchment area.

Figure 5: Percentage of TSFP and OTP admissions by CNC compared to population in CNC catchment area, Ukhiya, Jan 2018-Jan 2019

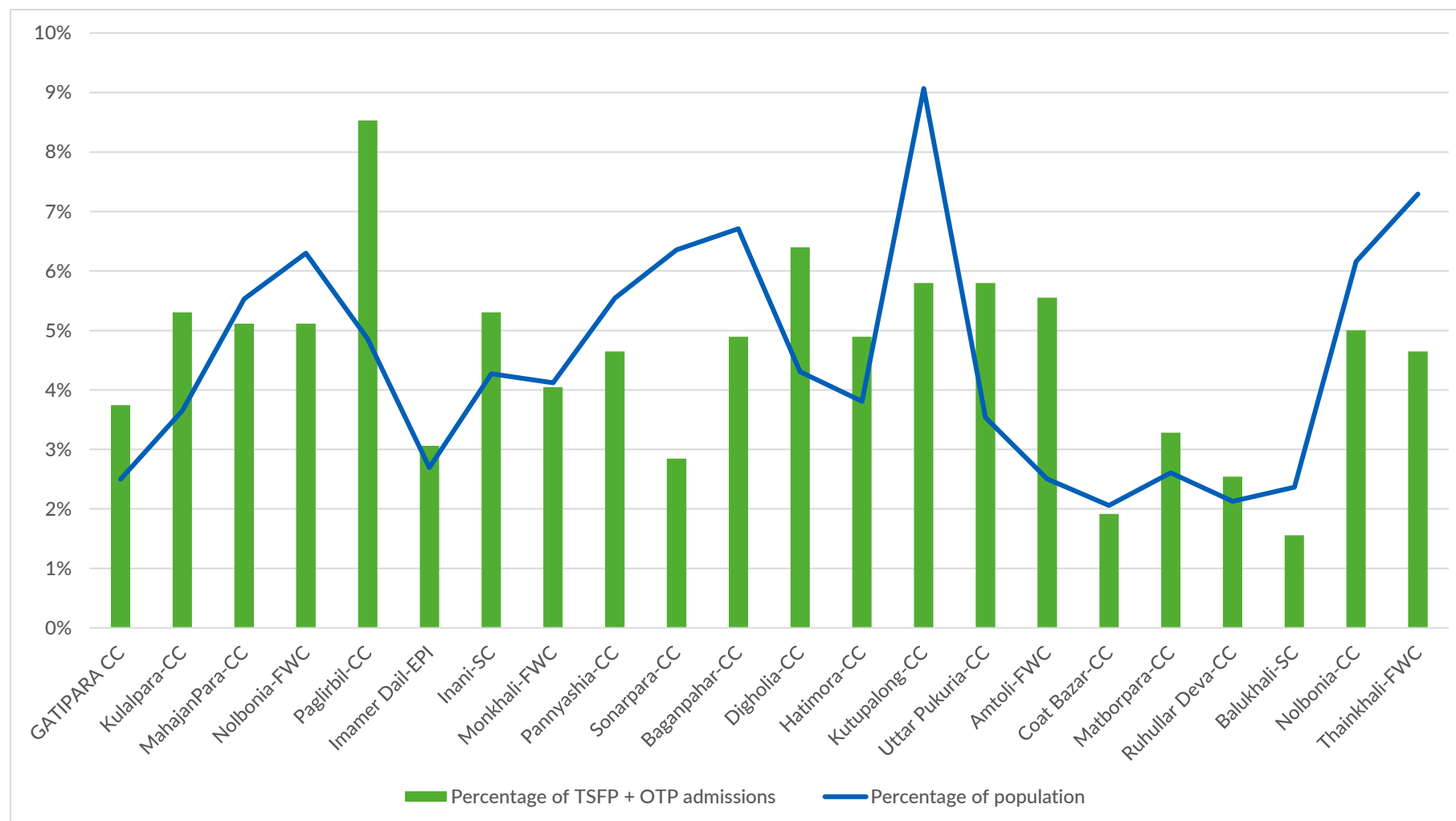
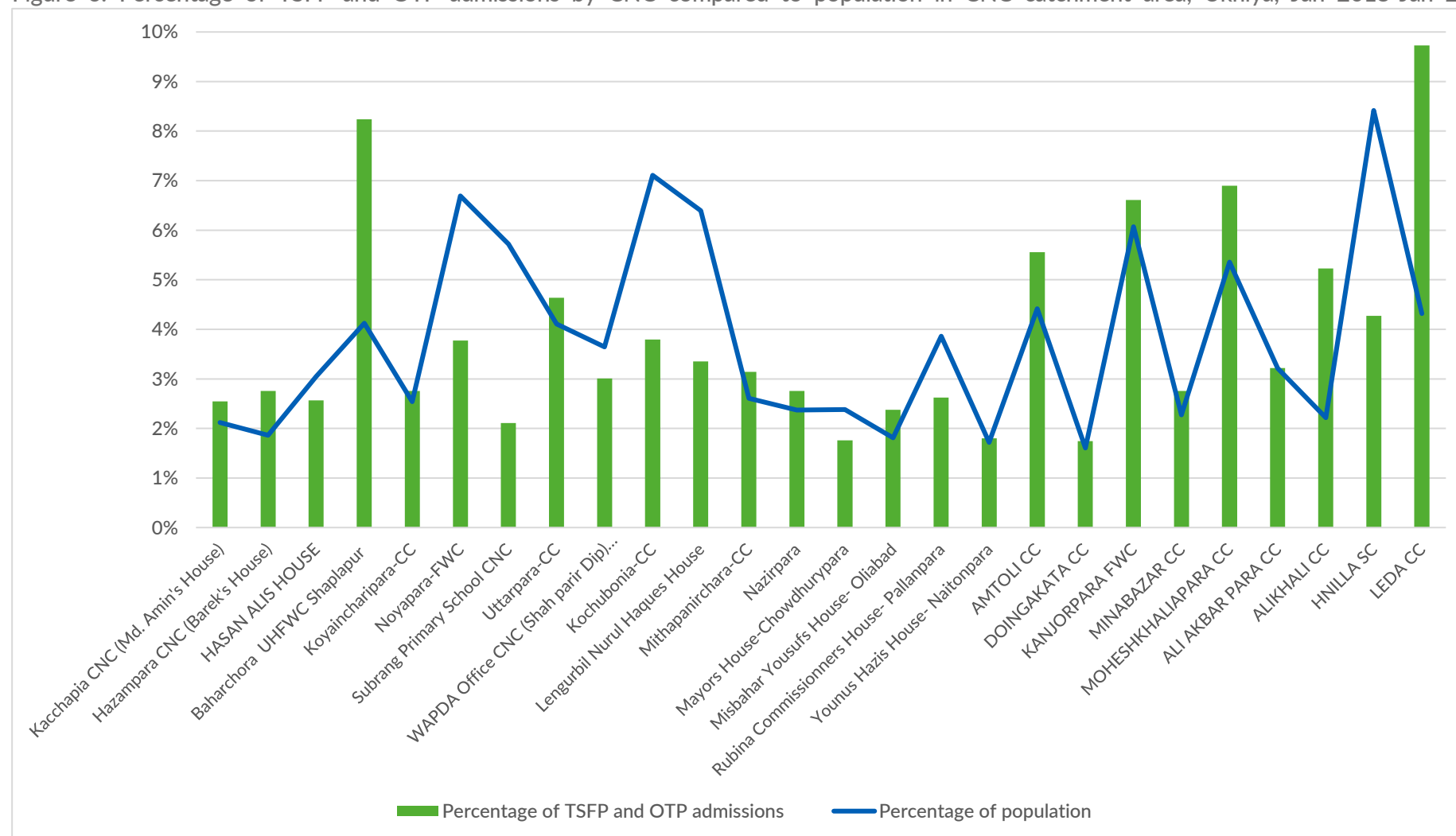


Figure 6: Percentage of TSFP and OTP admissions by CNC compared to population in CNC catchment area, Ukhiya, Jan 2018-Jan 2019



For example, in Paglirbil in Holdiapalong Union in Ukhiya, admissions were particularly high in comparison with the population in the catchment area – 9% of all TSFP and OTP admissions were admitted to Paglirbil CC, however the estimated population in the catchment area accounts for less than 5% of the total population.

Meanwhile admissions were lower than expected in Sonarpara – the population in the catchment area makes up approximately 7% of the total population in the Upazila, however only 3% of cases were admitted to the community clinic.

On the basis of this analysis and of the analysis of other performance related indicators observed at specific CNCs, the team then investigated potential reasons during the qualitative investigation.

How early were cases admitted to the OTP and TSFP?

The timeliness of admissions can be measured by analysing the MUAC measurements at admissions over a certain time period. The closer that the median of the list of admissions falls to the admission criteria, the earlier cases were admitted.

Figures 7 and 8 show the MUAC measurements at admission for Ukhiya and Teknaf OTPs.

Figure 7: MUAC at admission, Ukhiya OTP, January 2018-January 2019

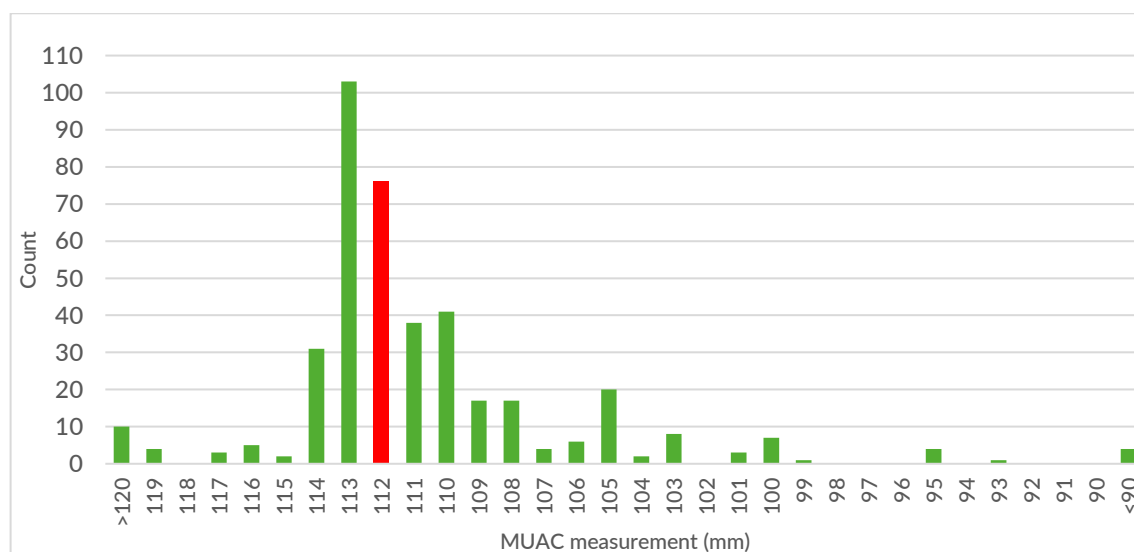
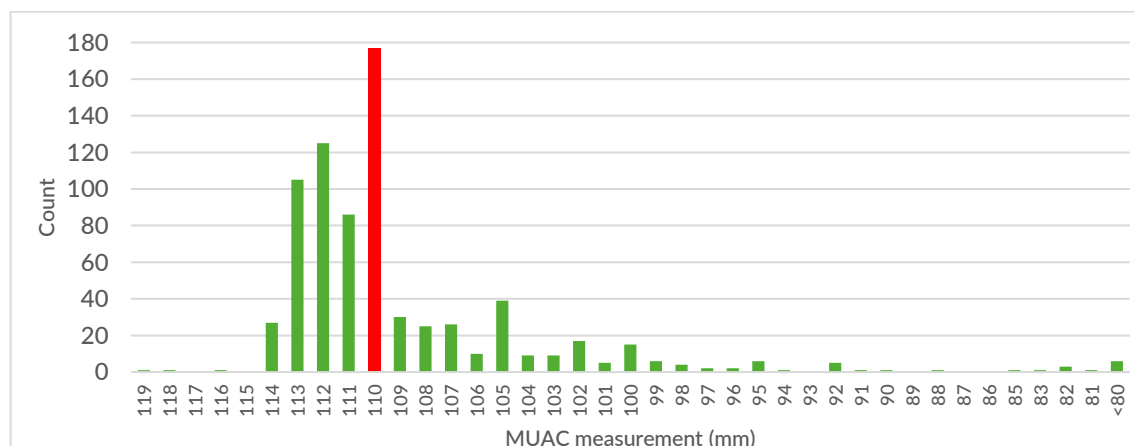


Figure 8: MUAC at admission, Teknaf OTP, January 2018-January 2019



With the median MUAC at admission in Ukhiya falling at 112mm, Figure 7 indicates that overall, admissions are earlier in Ukhiya than in Teknaf where the median was 110mm for the same period. This was primarily because the largest number of admissions in Teknaf were admitted at 110mm (compared to 113mm in Ukhiya) and there was a greater range of very late admissions (less than 100mm) in Teknaf.

A similar analysis was completed for the MUAC measurements for admissions to the TSFP. However as the MUAC at admission data was not available in a central database, MUAC at admission data was therefore collected for 5 representative CNCs in Ukhiya and 7 CNCs in Teknaf (one per union) for the January 2018-January 2019 period.

The findings of the TSFP admissions were similar to those of the OTP admissions. Median MUAC on admission to the TSFP was found to be 122mm in Ukhiya (2mm below the admission criteria) and 120mm in Teknaf.

The primary cause of the later admissions into the OTP and TSFP in Teknaf was attributed to staff shortages for cluster level screenings.

Why did admitted cases enter the OTP?

An analysis of referral sources was completed for the OTP in Ukhiya and Teknaf in order to understand why the carer of cases admitted to the programme decided to come to the CNC. The results are shown in Figure 9.

This data was not available centrally for TSFP admissions and it was not possible to collect from CNC registers prior to the training. Therefore no analysis was completed for TSFP sources of referral. However as the OTP and TSFP use the same methods to recruit cases into the programmes, the OTP referral sources analysis and the findings of the wide area survey in Section 3.6 are sufficient to provide information on how admitted cases are recruited.

Figure 9: Sources of referral for cases admitted to the OTP in Ukhiya and Teknaf, January 2018-January 2019

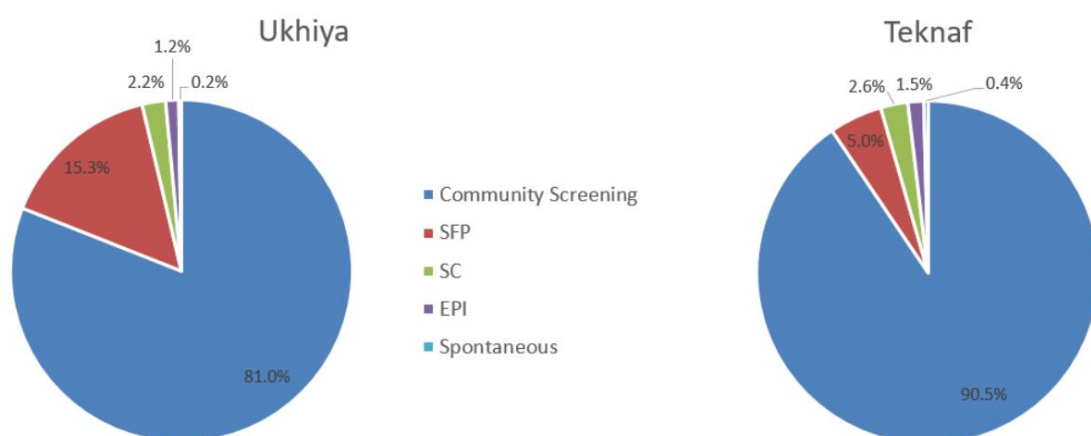


Figure 9 indicates that the majority of admissions to OTP programmes in both Ukhiya and Teknaf originate from community screenings which is a strong indication that, where community outreach strategies are active, CNVs are responsible for the majority of admissions to the programme. However the chart on the left indicates that 15% of admissions in Ukhiya's OTP originate from the TSFP (i.e. they were cases that were in the

TSFP who became SAM during treatment). These findings are concerning, particularly in relation to coverage, as they indicate that the TSFP is not as effective as it could be in certain CNCs in Ukhiya. The largest number of referrals from the TSFP came from Baganpahar and Sonarpara CCs.

3.2.3. DEFAULTER ANALYSIS

How did defaulters evolve over time?

If a child defaults from a CMAM programme then it is a sign of coverage failure. Therefore it is important to conduct a detailed analysis of defaulter data to analyse when and where defaults took place, and if possible to find out why.

Overall, defaulter rates from the OTP and TSFP were within the Sphere standards for both Ukhiya and Teknaf from January 2018 to January 2019. In Ukhiya OTP, 7% of cases discharged were discharged as defaulters; in Teknaf OTP, the figure was 3%. TSFP defaulter rates over the same period were slightly higher: Ukhiya 10% and Teknaf 6%.

Figures 10 and 11 show the number of defaulters over time for both programmes during 2018.

Figure 10: Cases discharged as defaulters, Ukhiya and Teknaf OTP, January- December 2018

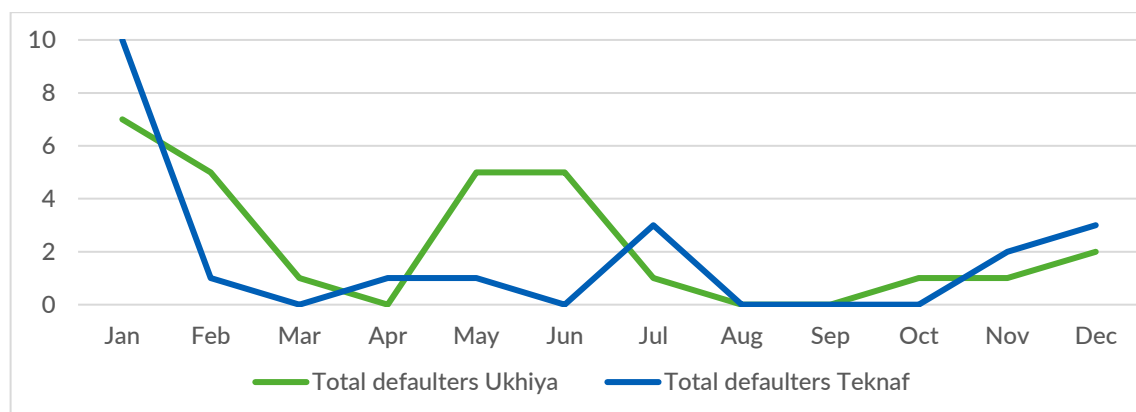
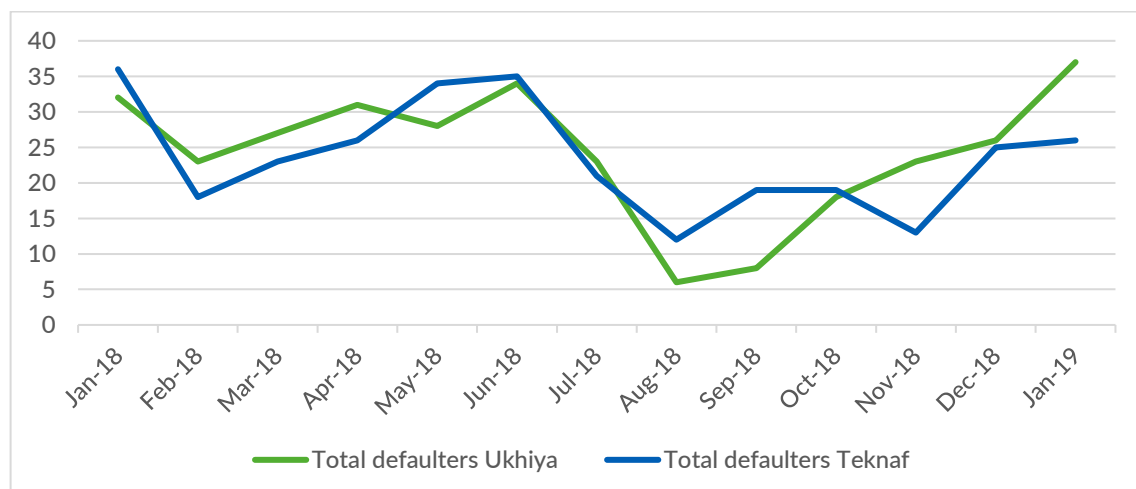


Figure 11: Cases discharged as defaulters, Ukhiya and Teknaf TSFP, January- December 2018



Despite having a smaller number of defaulters month by month, the charts show that defaulters from the OTP followed a similar pattern to TSFP defaulters over time. In January 2018, defaulters in both programmes were comparatively high before dipping slightly and then peaking again in June 2018. During the second half of the year, the number of defaulters per month reduced before rising again towards the end of the year.

The core team suspected that this trend was linked to accessibility during the year, with poor access during the monsoon season in June/July. December and January also coincides with busy periods for carers in terms of agricultural activities.

As indicated by the admissions over time analysis, during the second half of 2018, large numbers of children were admitted during certain months (July and October) possibly due to new CNWs and CNVs starting screening. Corresponding drops in defaulter numbers are also during this months.

Where were most defaulters located?

In Ukhiya OTP, the number of cases that defaulted was evenly split between 15 of the 25 CNCs. Hatimura CC had the most defaulters with 4 defaulters in total over the course of the year. In Teknaf OTP, Leda CC had the highest number of defaulters (7). The remainder were split evenly between 12 CNCs.

Figures 12 and 13 show the number of defaulters from the TSFP by CNC. The charts also show the percentage of total exits that the defaulters represented.

Figure 12: Defaulters by CNC, Ukhia TSFP, January 2018-January 2019

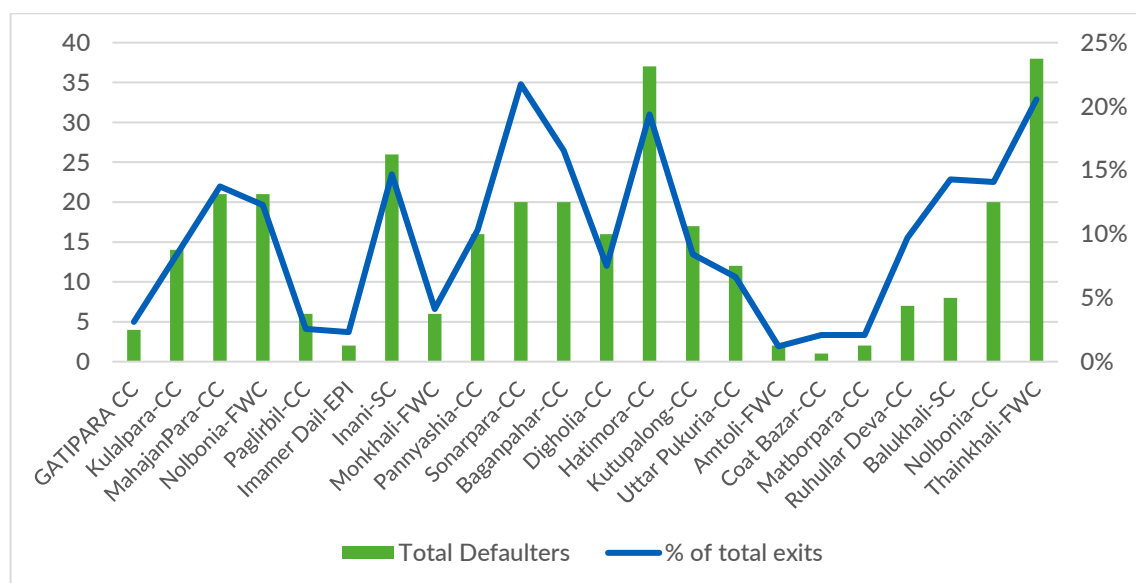
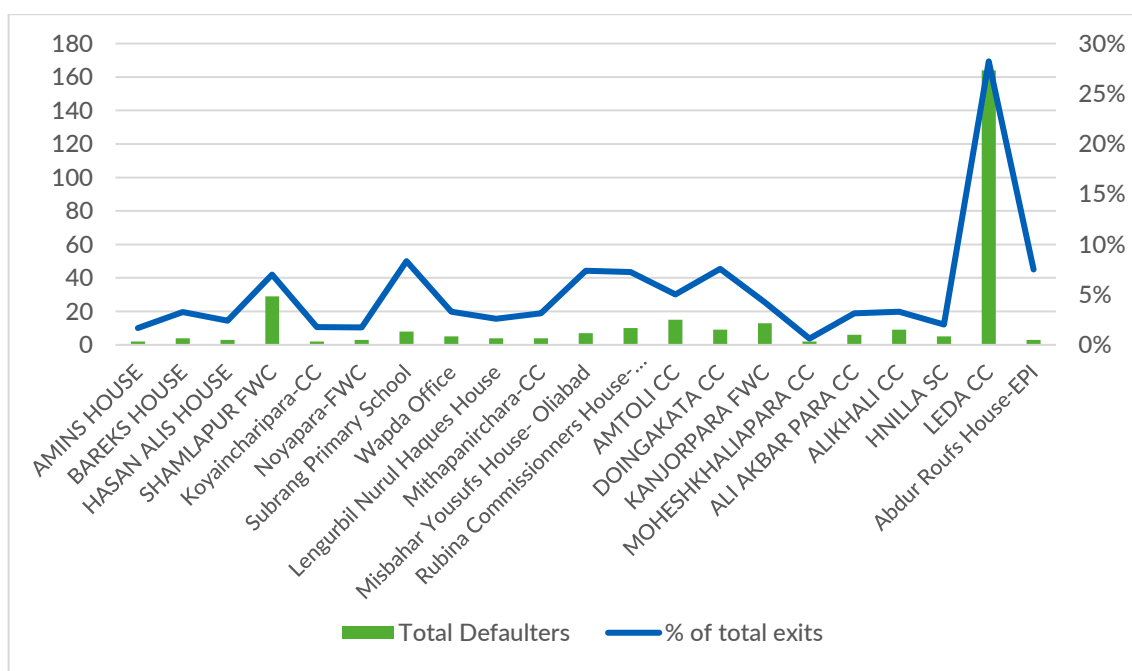


Figure 12 indicates that in Ukhia TSFP the proportion of defaulters exceeded the Sphere standard for defaulters (15%) in four CNCs: Sonarpara, Baganpahar, Hatimora and Thainkhali. Others (Mahajanpara, Inani, Balukhali and Nolbonia) were also close to 15%. This indicates therefore that coverage might be low in the catchment areas of these CCs. During the qualitative investigation, the survey team identified individual defaulters in some of the above CNCs and conducted case studies to understand what had caused the defaulters to leave the programme. The findings are summarised in below.

Figure 13: Defaulters by CNC, Teknaf TSFP, January 2018-January 2019



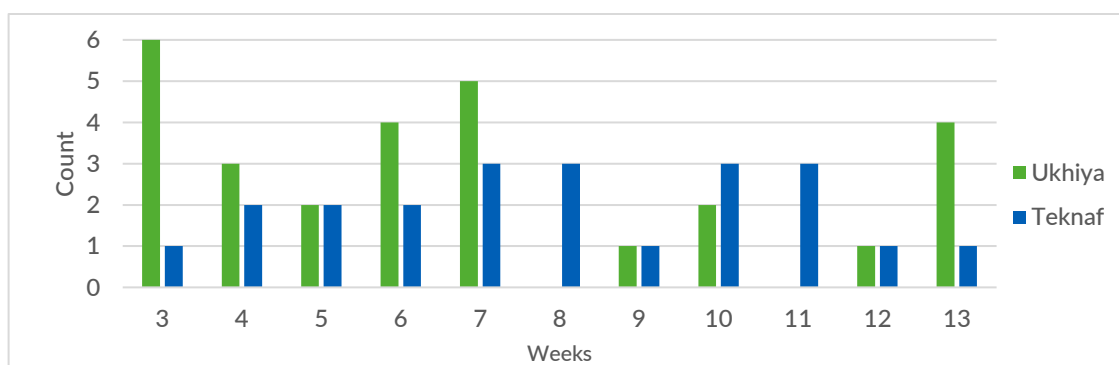
Leda CC had the largest number of defaulters by a significant margin compared to others CNCs. A total of 164 cases defaulted from the TSFP in Leda which accounted for 28% of all exits from the CNC. Defaulters in other CNCs did not account for more than 10% of exits from any of the other CNCs during the same period.

The reason for the high numbers of defaulters in Leda is due to the refugee influx. During 2018, refugee nutrition facilities in the makeshift camps were being established on an ongoing basis. Therefore many refugee child identified as MAM were admitted to Leda CC (as can be seen in by elevated admissions to the CC in Figure 6). As and when new refugee facilities near Leda CC started to operate, refugee carers enrolled in Leda CC TSFP switched their children to the new facilities which accounts for the high number of children discharged as defaulters.

How long did cases remain in the programme before defaulting?

By analysing the length of stay before default, it is possible to understand the potential default. Reasons for default. Figure 14 shows the length of stay before default in Ukhiya and Teknaf OTP.

Figure 14: Ukhiya and Teknaf OTP, length of stay in programme before default, January 2018-January 2019



The highest number of defaulters in Ukhiya defaulted after three visits to the CNC. This indicates that the reasons why these defaulters left the programme was linked to access or time related challenges. However in Teknaf, there is no observable trend of length of stay of defaulters suggesting that defaulting is linked to a range of reasons.

Length of stay before default data for the TSFP was not available centrally. Therefore length of stay data was collected from a representative sample of 12 CNCs in both upazilas. The CNCs included, in Ukhiya: Paglirbil CC, Inani UHSC, Kutupalong CC, Ratnapalong UH&FWC and Palongkhali UH&FWC; and in Teknaf: Shamplapur UH&FWC, Uttarpara CC, Lengurbil CNC, EPI Centre (Hazi Yunus House), Amtoli CC, Nhilla UHSC, and St Martin UHSC. The length of stay before default analysis is shown in Figure 15.

Figure 15: Ukhiya and Teknaf TSFP, length of stay in programme before default, January 2018-January 2019 (12 CNCs only)

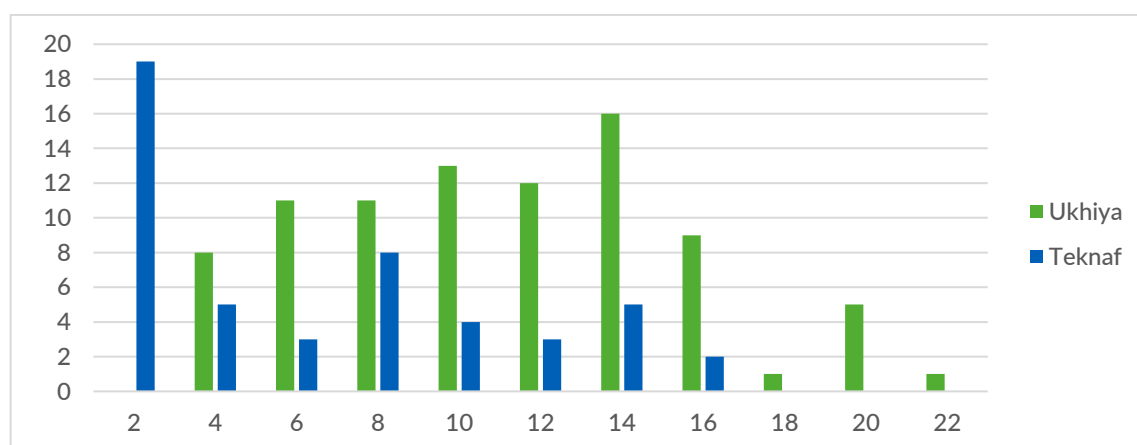


Figure 15 indicates that defaulting generally takes place at all stages of treatment for MAM cases. Some leave the programme after 2-10 weeks (1 to 5 visits) and others leave after 12 to 20 weeks (6 to 10 visits). The large number of cases that defaulted from Teknaf TSFP after 2 weeks nearly all defaulted from Shamplapur CNC.

Defaulter case studies

During the qualitative data investigation, survey teams located 8 defaulters in selected CNCs and identified the reasons why the carer defaulted the child from the programme. The reasons why a child may default from the programme are often complex and not due to one particular reason. Therefore it is useful to collect case studies from a range of different contexts to illustrate some of the reasons behind defaulting.

The findings of the case studies are summarised in Annex 3. The case studies illustrate that the causes of default can be diverse and are often complex. Five of the eight case studies relate to accessibility (distance or poor road state) and lack of time of the caregiver which indicates that even though distances are relatively short (the majority of villages in both upazilas are located less than 5km from CNCs) caregivers default their child from the programme because they cannot spare the time. Some also mentioned that they can buy the same food from the local market easily and for a cheaper price than the cost of taking a CNG or tom tom to the CNC.

3.2.4. PROGRAMME EXIT ANALYSIS

How have programme exits evolved over time?

CMAM programme performance is closely linked with the coverage of the programme. Poor performance (high defaulter and CNR rates) are more likely to discourage high coverage of the programme, even if there is active case finding in the community. If many children are exiting the programme as defaulters or as CNR, the community are likely to perceive the programme negatively.

Tables 6 and 7 show the combined programme performance rates for the OTP and TSFP in Ukhiya and Teknaf in 2017 and 2018.

In 2017 in both programmes performance was worse. This was primarily as a result of the impact of the refugee influx. A large number of cases from the refugee community were admitted to the host community programmes shortly after the influx and then defaulted soon after. The performance of Ukhiya's OTP and TSFP were most severely affected by the refugee influx; the cure rate of Ukhiya's TSFP was 60% in 2017.

Table 6: Ukhiya and Teknaf OTP programme exits, 2017 and 2018 (Source: APR data)

	2017	2018
Cured	82.8%	86.7%
Defaulter	9.7%	4.7%
Death	0.7%	0.4%
CNR	6.7%	8.2%

Table 7: Ukhiya and Teknaf TSFP programme exits, 2017 and 2018 (Source: Reported data)

	2017	2018
Cured	73.2%	86.3%
Defaulter	15.8%	7.5%
Death	0.1%	0.0%
CNR	10.9%	6.2%

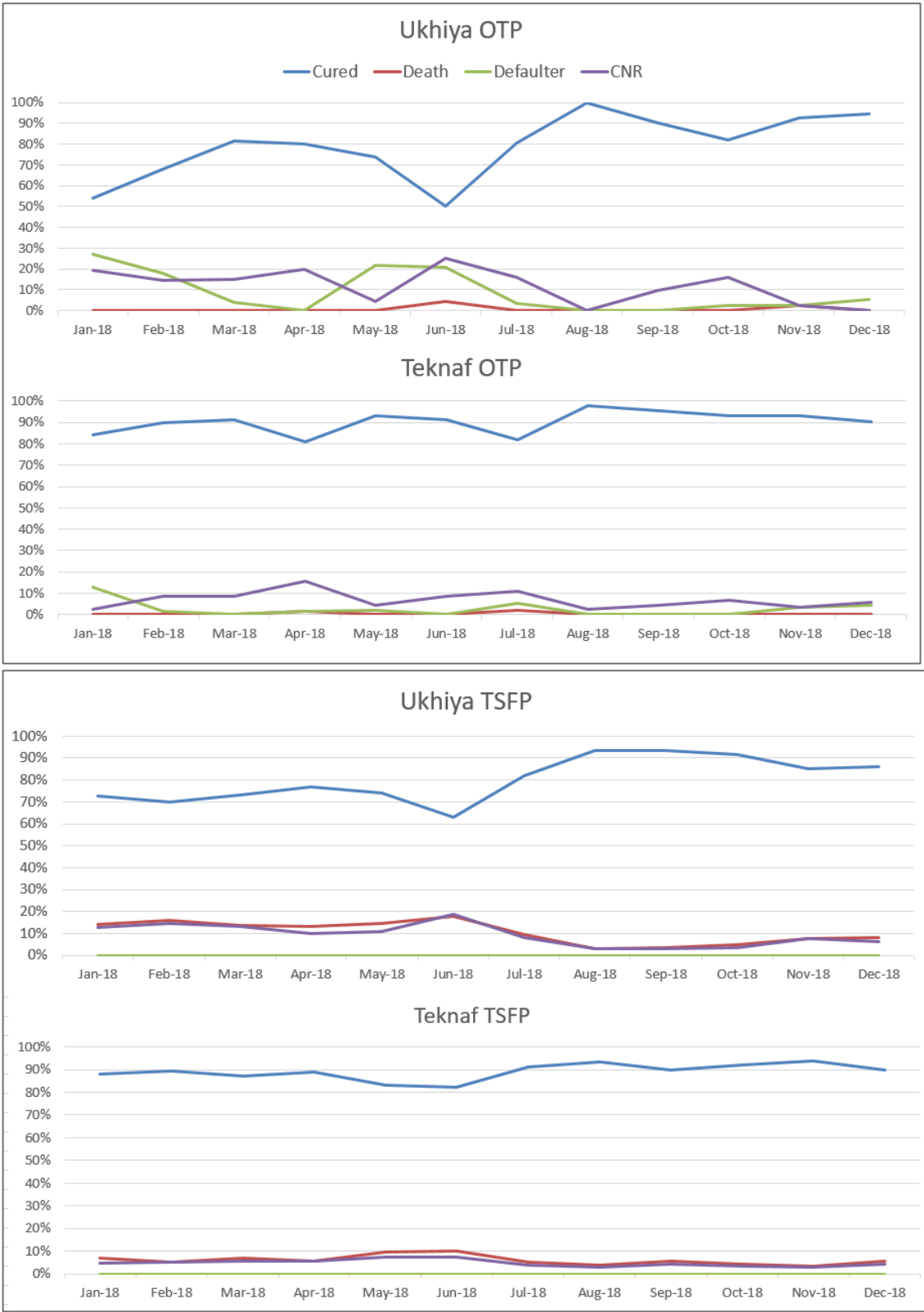
In 2018, the situation improved in both programmes. Figure 16 shows the performance rates of both programmes in Ukhiya and Teknaf during 2018.

Ukhiya OTP had the worst performance rates over the period with a notable dips in cure rates in January and June. In spite of these drops, the overall cure rate for the year was 81% in Ukhiya OTP. Cure rates in Teknaf OTP remained above Sphere standards (75%) throughout 2018 with two small dips in April and July due to rises in the CNR rate.

Rises in defaulter and CNR rates can also be seen in the TSFP in Ukhiya and Teknaf in May / June (although again they were more severe in Ukhiya than Teknaf).

Seasonal weather is likely to have been the main cause of the rises in defaulter and CNR rates in both programmes in May and June. During these months community access to nutrition facilities is hampered by adverse weather and muddy roads. Staff shortages following the refugee influx in the first half of 2018 also appear to have negatively affected performance of both programmes.

Figure 16: Ukhiya and Teknaf OTP and TSFP performance rates, 2018



Which CNCs were best performing? Which were worst performing?

Performance rates for OTP and TSFP by union and by CNC are shown in Annex 1 and 2 for the period of January 2018 to January 2019.

In Ukhiya, CNCs which were poor performing (had cure rates lower than 75%) included:

- Holdiapalong: Mahajan Para TSFP
- Jaliapalong: Inani and Sonarpara TSFPs
- Rajapalong: Baganpahar OTP and TSFP, Hatimora OTP and TSFP
- Ratnapalong: Ruhullar Deva OTP
- Palongkhali: Thainkhali TSFP

Overall the CNCs in Rajapalong had the poorest performance during the period (in Ukhiya and Teknaf). The average cure rate when considering OTP and TSFP discharge rates in the five CNCs in the union was 79%. The CNCs in Ratnapalong had the strongest performance in Ukhiya with an average cure rate of 88%.

In Teknaf, Leda CC TSFP in Nhilla union had a cure rate of 52% - making it the lowest performing of all OTP and TSFPs in Ukhiya and Teknaf in the analysis period. However all other OTPs and TSFPs in Teknaf achieved a cure rate greater than 75% for the period.

Overall Nhilla was the poorest performing of all unions considering OTP and TSFP performance rates with an average cure rate of 88% across the four CNCs in the union. Teknaf Sadar had the strongest performance in terms of cure rates with an average cure rate of 94% in the four CNCs in the union.

How long did cases stay in the programme before being discharged as cured?

The length of stay that a child remains in an OTP or TSFP before being discharged as cured also be an indication of the quality of the programme.

Cases that stay in the programme for longer are likely to have entered the programme at a later stage of the onset of the disease which is a reflection of the infrequency of case finding. However it can also indicate that carers may be sharing the nutrition product provided for their child with others in the family therefore prolonging the child's recovery.

Figure 17 shows the lengths of stay before cure for all cases discharged from Ukhiya and Teknaf OTPs during 2018.

Figure 17: Weeks in programme before discharge as cured, Ukhiya and Teknaf OTP, 2018

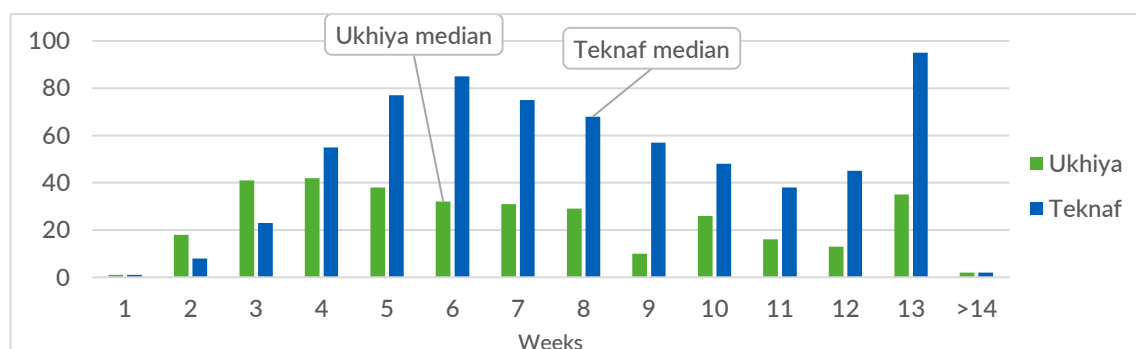


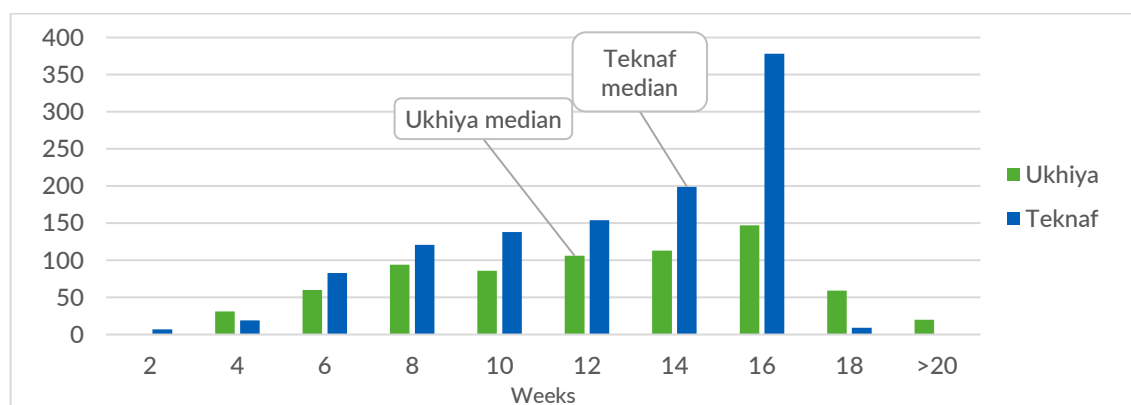
Figure 17 indicates that in Ukhiya, the median length of stay before discharge as cured is 6 weeks. This means that approximately half of those discharged remained in the programme for less than 6 weeks and half stayed in the programme for more than 6 weeks. Considering that the maximum permitted length of stay in the programme is 12 weeks (13 visits), this is a relatively short length of stay.

In Teknaf the median length of stay before cure was 8 weeks. This is largely due to fact that a relatively large number of cases were discharged after 13 weeks. On further investigation, it was found that many of these cases were being treated in Shamlapur CNC (Bahachara union) and were children from refugee families who were being hosted in the village of Shamlapur. According to the CNW, they remained in the programme for a long time due to poor sanitary conditions in their homes.

Aside from this, Teknaf lengths of stay before cure appear to be slightly longer than in Ukhiya which suggests that case finding is less timely in Teknaf than Ukhiya (which is also reflected by the lower Median MUAC on admission in Teknaf OTP in Figure 8).

Figure 18 shows the length of stay before cure from the 12 CNCs for the TSFP in 2018.

Figure 18: Weeks in programme before discharge as cured, Ukhiya and Teknaf TSFP, 2018 (12 CNCs)



Distributions in the TSFP are every two weeks and children should be discharged after 8 visits (16 weeks). Figure 18 shows that in the Ukhiya TSFP, the median number of visits before discharge is similar to the OTP (six visits) which represents a relatively short length of stay. However the highest number of cases are discharged after 8 visits (16 weeks) and there were more than 50 cases discharged after 9 visits (18 weeks) which is two weeks longer than permitted in the protocol.

Again, Teknaf had a longer median length of stay (7 visits or 14 weeks) compared to Ukhiya, because a very large number of children were discharged after 8 visits (16 weeks). More than half of the children discharged after 16 weeks were discharged from Shamlapur CNC (Baharchara union) and Uttapara CNC (Subrang union).

What were the causes of cases being discharged as CNR?

During the qualitative data collection, teams collected case studies from cases that had been discharged from the OTP and TSFP as CNR (Child Non Respondent). The team were asked to collect case studies owing to the relatively high rates of CNR reported in 2018, particularly in the OTP in Ukhiya (2018 CNR rate: 8.2%).

Six case studies were collected from OTP CNR cases and two from TSFP CNR cases. A summary of the results are shown in Annex 4.

The case studies were collected from a representative selection of villages in both upazilas. The data collection teams used case study templates to gather key information from the carers of the CNR cases and to make observations about the state of their homes and surroundings.

In all of the OTP CNR case studies the investigation teams found that the family lived in very poor households which had poor hygienic conditions. As such the carer told the investigation teams that their child had frequently suffered from diarrhoea and fever during treatment.

In two case studies, the carers said that their child had not been breastfed sufficiently due to the mother being ill or being too busy with work. One of the case studies also found that the child had been the 7th child of the family and had arrived prematurely, which had both contributed to the child becoming sick repeatedly.

The findings of the case studies therefore underline the need for ongoing sensitisation and follow up of cases by CNVs and CNWs once they are in the CMAM programme.

3.3. QUALITATIVE DATA

3.3.1. INTRODUCTION

The findings from the qualitative data investigation are presented in this section. The section is grouped into thematic areas and presents the key observations and findings from the qualitative investigation and, where relevant, how the situation has changed since the last SQUEAC survey. Unless stated otherwise, the findings related to both Ukhiya and Teknaf and to both the OTP and TSFP.

3.3.2. KEY OBSERVATIONS

Awareness, understanding and perception of malnutrition

Overall there was very good knowledge about malnutrition amongst community members reached during the qualitative investigation. In nearly all focus group discussions, both carers of acutely malnourished children and female and male community members stated that malnutrition is a disease which requires medical treatment. Slightly fewer community members and carers went on to confirm that because of the good understanding of malnutrition, acutely malnourished children were not stigmatised in their community.

Knowledge about the primary causes of malnutrition was also predominantly strong. Multiple community members, including community medical personnel (eg pharmacists and traditional healers), confirmed that malnutrition was caused by a lack of hygiene and care practices and insufficient food intake. This was confirmed during interviews in both upazilas, but more frequently in Teknaf.

However this was not the case in all communities. Evidence of poor knowledge about malnutrition also came out of interviews and FGDs. For example some key informants stated that malnutrition and other childhood diseases (such as pneumonia) are communicable diseases and are sometimes caused by supernatural causes. This was mentioned most frequently by community-based nutrition staff and by key community personnel (including village and religious leaders and teachers) when talking about the community members in their communities. But it was also mentioned during four FGDs with community members and one group of carers of acutely malnourished children. For this reason and others, in some communities children with symptoms of some child diseases (including malnutrition) were said to be stigmatised by other community members. Negative perceptions like were found in unions in both Ukhiya and Teknaf.

Based on the interviews conducted, it is difficult to determine the extent to which the awareness, understanding and perception of malnutrition has changed since the previous surveys in Ukhiya and Teknaf. Based purely on the percentage of carers who correctly identified malnutrition as a disease, the situation had improved from 2015 to 2019. In 2015 50% of carers identified malnutrition as a disease; in 2019 this had increased to 73% (11 out of 14 FGDs with SAM / MAM carers) which is an indication of the effectiveness of the courtyard sessions that have been taking place.

Health seeking behaviour

While awareness of malnutrition is generally good in the communities of Ukhiya and Teknaf, the investigation found that some community members still prefer to go to

unregistered health practitioners such as traditional healers, pharmacists and, in some cases, Imams, to seek advice if they or their child is sick than to go to the CNC.

This was mentioned most regularly by the community medical personnel themselves, but it was also confirmed by some carers and community members. If unregistered health practitioners recognise that a malnourished child is sick and they are unable to help, then they will normally refer the carer to the upazila hospital and the hospital will then refer them to the CMAM programme. However this may take time and mean that the child gets more and more malnourished therefore increasing their recovery time. Therefore, while the child will eventually be admitted to the CMAM programme, this factor may have an indirect negative impact on coverage as the perception of the effectiveness of treatment in the CMAM programme reduces in the eyes of the community. It is possible that the relatively late OTP admissions seen in Teknaf (evidenced by the low median MUAC admissions) was caused (partly) by a preference for unregistered care.

A comparatively small number of community members (1 group of community members and 1 group of carers) stated that their preferred health seeking behaviour was to go to the nutrition or health clinic (registered health facilities).

On balance, mothers were said to be the primary decision makers at household level level which is positive. This was stated during FGDs with around half of the carers of malnourished children and by some community members as well as during multiple interviews with community nutrition personnel. Carers and community members also said that the decision is sometimes taken after discussion with the family (either just with the father or with the wider family) and that other family members or neighbours support with the care of other children while the carer travels to the CNC with their sick child.

However during around 20% of FGDs with carers, it was said that the father is still the primary decision maker with regards to the care of the child, especially if there a cost involved (e.g. transport cost or time away from home). In one of the OTP defaulter case studies, it was found that the carer had defaulted as the father had refused to provide funds for a tom tom ride to the mother on a weekly basis. This underlines the need for specific sensitisations for male community members or husbands of carers (discussed more below).

Understanding and perception of CMAM programme

All carers with children in the CMAM programme who were included in the FGDs with the investigation team shared positive feedback about the CMAM programme. Carers most frequently said that they happy with the treatment products and they could see the improvement in their children. Around half of carers of SAM and MAM cases also went on to add that their children very much liked eating the products.

For these reasons, most carers interviewed said that they had recommended or would recommend the programme to other mothers in the community with children in a similar state to theirs.

There was also a good level of understanding amongst carers, community members and key community people about the difference between NT and WSB++. Most understood that NT was for very sick children and WSB++ was for less sick children. A lack of understanding of the difference between the products had been identified as a negative

factor during the two previous SQUEAC surveys in Ukhiya and Teknaf and so it was positive to see that community knowledge had improved in this area.

However some misunderstandings about the programme remained. During 5 FGDs (3 with community members and 2 with carers) participants mentioned that some people in the communities perceive that the CMAM programme is only for poor people and are too proud to take their children there.

Other key informants stated that community members in their communities have suspicions about NGOs (e.g. NGOs make a profit from supporting communities or NGOs try to convert community members to other religions). This information came from a relatively limited number of key informants, but it was stated by around half of the community nutrition staff interviewed which suggests that pockets of community members throughout the villages visited have these opinions. This information came predominantly from unions in Ukhiya.

Community outreach activities

All groups of key informants confirmed through SSIs and FGDs that regular sensitisations about the CMAM programme were taking place in their communities. Even those who were not involved in the sensitisations (male community members, community leaders and religious leaders) acknowledged that sensitisations take place in their communities.

Multiple community members also said that they appreciated the subjects covered during the sensitisations and the fact that local women conducted them. The community nutrition volunteers interviewed also confirmed that they had the necessary tools and materials to conduct the sensitisations.

However a negative factor raised in some communities was that certain groups in the community are excluded from sensitisations who should be. Key informants in 16 communities stated that men, community leaders, religious leaders and teachers are not included in sensitisations. As such, the investigation found examples of fathers refusing to provide their wives with funds to pay for transport to go to the CNC on a weekly basis and community and religious leaders having incorrect understandings about malnutrition. That said, in at least 5 communities (4 of which in Ukhiya) key informants stated that men and community leaders were included in sensitisations.

It was also suggested by a number of key informants (including by government health facility staff, that community leaders could play an important role in sensitising the community, but are not currently doing so. That said, in other communities (mostly in Teknaf), key informants said that community leaders *do* contribute to the education of the community in relation to malnutrition and the CMAM programme. This indicates therefore that this happens in some communities but not in others. It was also said in one interview that additional sensitisations are completed by the Government of Bangladesh about malnutrition which are nothing to do with CMAM programme.

All carers and most female community members confirmed that CNVs screen their children during these sensitisation sessions or during cluster level screenings on a regular basis. The high frequency of screenings is evidenced by the relatively early admissions to the OTP in Ukhiya. However the slightly later admissions in Teknaf (median MUAC 110mm) suggest that screenings are less regular in certain parts of Teknaf.

Community members and carers in some unions said that screenings and sensitisations had reduced since the Rohingya influx and that their motivation to attend the sensitisations had reduced as snacks and incentives were not offered at the CMAM programme sensitisations. The reduction in the frequency of screenings and sensitisations is largely due to the high turnover and absence of staff. This will be discussed more below.

Finally, nearly all carers who participated in FGDs during the data collection (in 10 out of 12 FGDs) stated that CNVs had visited their homes while their child had been in care to follow up on their progress and treatment. This was confirmed during discussions in both Ukhiya and Teknaf and was also mentioned in discussions with some community members. This is a positive factor of the programme and the impact can be seen by the relatively low defaulter rates and short median length of stay before cure (especially in Ukhiya).

Quality of care in nutrition facilities

Feedback from carers about the quality of care in health facilities was mostly positive.

Nearly all carers spoken to stated that CNC staff demonstrate positive behaviour to them and their children during admission to the programme and during subsequent distributions. Many also confirmed that CNWs advise carers to not share the product with other family members which is positive.

Carers in the majority of catchment areas visited also said that waiting time had been relatively short in nutrition facilities during their visits and that stock outs had not occurred during their time in the programme. During some interviews with community nutrition staff and government staff in nutrition facilities, interviewers also heard that facilities and service had improved in host community facilities since the Rohingya influx. This could explain the high cure rates seen in many health facilities during 2018 as carers are more motivated to continue treatment through to cure if the facilities and staff are more welcoming.

The programme team confirmed that funds had been invested in the host community programme during 2018 and at least one new CNC had opened in 2018 in Ukhiya.

A few of the government staff and community nutrition staff interviewed also stated that the tripartite relationship that operates in both upazilas (between SHED, Action Against Hunger and the Government of Bangladesh) works effectively resulting in a well-functioning programme.

However there were also negative points raised in relation to the quality of facilities raised by some key informants and observed by the investigation team. Lack of appropriate storage facilities, covered waiting areas and water in the toilet were noted as negative factors in at least 9 health facilities. In addition to investigation team observations, nutrition facility government and programme staff mentioned these as negative factors during interviews.

Staff support and supervision and staff availability

The majority of the Government of Bangladesh facility staff and the community nutrition staff (CNWs and CNVs) interviewed stated that they receive effective and regular training and supervision to fulfil their duties within the CMAM programme.

Many of those interviewed (mostly the community nutrition staff), went on to say that they were proud to serve their community and to improve the health of malnourished children. One group of carers also confirmed that they can see the pride and devotion that their CNV has in fulfilling their role.

However many key informants interviewed (including nutrition facility and nutrition community staff and upazila coordination staff) said that there had been regular staff turnover and staff absences following the Rohingya influx which had affected the delivery of the programme. The investigation team (many of whom were involved in the supervision and management of the programme confirmed this. The impact of staff turnover during 2018 this was seen in the quantitative data analysis, particularly in the evolution of admissions over time and the poor programme exits in certain CNCs.

Staff shortages were still affecting the programme at the time of the investigation. Core team members noted in a number of unions that they visited that there were certain clusters which were not covered by a CNV or that CNVs were required to coverage large numbers of clusters due to absences.

Related to this, in 7 CNCs visited, key informants and the investigation team highlighted negative behaviour of CNC staff. Some groups of carers said that they had experienced inappropriate staff behaviour and that staff had not appeared confident in their role. Some of the investigation team also observed incorrect protocols being followed due to new and inexperienced staff who had not been fully trained. Finally, some CNC staff themselves stated that they had not been sufficiently trained.

Access and time related factors

In spite of the fact that distances from communities to CNCs rarely exceed 5kms in Ukhiya and Teknaf (just 4 villages are recorded as being located more than 5kms from their closest CNCs), distance and access related challenges came up quite frequently as barriers to access during qualitative data collection.

During FGDs with four groups of carers, carers said that they face challenges accessing the CNC. This was due to excessive distance, the poor state of roads (in general and during the monsoon) or because they could not afford to pay for a tom tom or CNG to go the CNC. A few carers mentioned that the increase in traffic as a result of the Rohingya influx had negatively influenced their decision to go to the CNC. Accessibility challenges seemed to be a negative factor affecting coverage in both Teknaf and Ukhiya. The rise in defaulters during the monsoon season and the defaulter case studies collected (Annex 2) provide additional evidence that carers default their children from the programme due to access restrictions.

It was not only carers who mentioned distance and access as negative factors. Community nutrition staff also stated that distance and poor access made their work difficult. This therefore suggests that in some unions, the motivation of CNVs to conduct courtyard sessions throughout their catchment area might be impacted by distance and poor access.

Conversely, during FGDs with six groups of carers, the carers said that their proximity to the CNC was a positive factor influencing their decision to continue treatment. Five of these six FGDs took place in Teknaf. Therefore this indicates that access challenges are not experienced by all carers of malnourished children throughout the two upazilas.

It was also noted in some defaulter case studies and during interviews with community medical practitioners and facility staff that carers do not come to the CNC (to be admitted and/or for repeat visits) as they are too busy to take the time away from income generating activities. Therefore the opportunity cost for some is too high to make a weekly or bi-monthly trip to the CNC.

Sale of WSB++ and NT in host community

Many of the key informants interviewed in Ukhiya and Teknaf said that they had seen a significant increase in the sale of WSB++ and NT in local markets by Rohingya refugees since the massive Rohingya influx.

Whenever this was mentioned, the key informants in the host community emphasised that they had never seen any community members from the host community selling nutrition products; it was always the refugees who were selling it, either directly in the host communities or to local traders who then went onto to sell to community members in the host community.

At the time of the SQUEAC, key informants told the investigation team that a packet of NT could be purchased for 10 taka and a bag of WSB++ for 20-30 taka. Considering that the volume of WSB++ in the refugee communities was much larger than the volume of NT, key informants mostly said that they had seen WSB++ being sold much more frequently than NT. However a number of key informants said that they had seen both products for sale.

During the course of the investigation, some of the investigation teams tried to find out how the availability of large quantities of WSB++ affected the coverage of the CMAM programme by conducting informal interviews with key informants. It was difficult to ascertain the true impact and extent of the sale of nutrition products on the coverage of the CMAM programme. However the investigation team determined that the sale of nutrition products in markets impacted coverage in two ways:

1. Carers of TSFP beneficiaries were able to buy TSFP at cheap prices from local markets rather than having to pay for a return journey to nutrition clinics in CNGs or tom toms (which might cost 50-60 taka). Therefore they would default from the TSFP (this was mentioned in one of the TSFP defaulter case studies in Subrang). The carers would also save the time of the journey and needing to have their child measured during the distribution.
2. The WSB++ for sale in markets was actually cheaper than regular flour. Therefore carers would purchase WSB++ to use as a cooking ingredient (eg. To make break) and sometimes even to feed to their animals. This therefore increased the risk of host community members perceiving the WSB++ as regular food which could be shared amongst family members. Children in the MAM programme would receive less of the product potentially prolonging the recovery time of their MAM children (or putting them at risk of becoming SAM). However some of the host community carers spoken to said that they were aware that WSB++ was a "special" food for sick children (which they had seen others feed their children through the TSFP) and therefore wanted to purchase it and feed it to their children to ensure that their children were strong.

Owing to the fact that much more WSB++ was available than NT, this factor was determined to be much more likely to have a significant impact on the coverage of the TSFP.

3.4. STAGE 2 RESULTS AND ANALYSIS

3.4.1. INTRODUCTION

The methodology for the two hypotheses tested during Stage 2 are set out in Section 2.2. The detailed case findings results village by village are shown in Annex 5. The results from both tests and interpretation of the findings is outlined in this section.

3.4.2. HYPOTHESIS 1 – DISTANCE TEST

To test this hypothesis, two villages with suspected high coverage and two villages with suspected low coverage were selected. The selected villages are shown in Table 9.

Table 9: Villages selected to test Hypothesis 1

	Upazila	Union	Nearest CNC	Village name	Approx. distance to CNC
Low coverage villages	Ukhiya	Palongkhali	Thangkhali FWC	Telkhola	6-10 km
	Teknaf	Whykong	Amtoli CC	Keruntoli	
High coverage villages	Ukhiya	Rajapalong	Uttarpukuria CC	Uttarpukuria	<1km
	Teknaf	Teknaf Sadar	Lengurbil CNC	Hatiarghona	

The analysis of the results is shown in Table 10. "Total cases" includes both SAM and MAM cases found during case finding in the selected villages.

Table 10: Results from hypothesis test 1

	High coverage villages	Low coverage villages
	<1km from CNC	6-10 km from CNC
Total cases found (<i>n</i>)	8	7
Coverage standard (<i>p</i>)	60%	60%
Decision rule (<i>d</i>)	4	4
Covered cases found	4	0
Interpretation	Covered cases does not exceed <i>d</i> . Hypothesis not proven	Covered cases does not exceed <i>d</i> . Hypothesis proven

As shown in Table 10, Hypothesis 1 was *part* proven. In the distant villages no covered cases were found. In the near villages, some covered cases were found but as the number of covered cases did not exceed the decision rule, this part of the hypothesis test was not proven.

These results indicate that villages located far from CNCs are more likely to have low coverage; but that it is not always the case that villages located close to CNCs will have high coverage. So overall it can be said that the result is inconclusive.

However, given that 4 out of the 8 carers of cases in the case studies who had defaulted from the programme had abandoned the programme due (in part) to excessive distance from their homes to the CNC, one can say that distance between villages and health centres does have an impact on the coverage of the programme.

3.4.3. HYPOTHESIS 2 – CNV WORKLOAD

To test hypothesis 2, 6 villages were selected: 3 with suspected high coverage and 3 with suspected low coverage. The selected villages are shown in Table 11.

Table 11: Villages selected to test Hypothesis 2

	Upazila	Union	Nearest CNC	Village name	No. of clusters by CNV
Low coverage villages	Ukhiya	Rajapalong	Kutupalong CC	Foliapara	More than 65 clusters by CNV
	Teknaf	Nhilla	Leda CC	Noya Para	
	Teknaf	Subrang	Noyapara CC	Deguliar Bil	
High coverage villages	Ukhiya	Ratnapalong	Matborpara CC	Goyalmara	Less than 65 clusters by CNV
	Teknaf	Teknaf Sadar	Nazir Para CC	Molobi Para	
	Teknaf	Baharchora	Hazampara CC	Hazampara	

The analysis of the results is shown in Table 11.

Table 12: Results from hypothesis test 2

	High coverage villages	Low coverage villages
	Less than 65 clusters by CNV	More than 65 clusters by CNV
Total cases found (<i>n</i>)	14	6
Coverage standard (<i>p</i>)	60%	60%
Decision rule (<i>d</i>)	8	3
Covered cases found	9	3
Interpretation	Covered cases exceeds <i>d</i> . Hypothesis proven	Covered cases does not exceed <i>d</i> . Hypothesis proven

Hypothesis test 2 was proven in both sets of villages visited which confirms that if a CNV has a large number of population clusters to cover during her work, coverage in the area is likely to be low.

3.4.3. STAGE 2 ANALYSIS

The results of the two hypothesis tests confirmed the investigation team's beliefs about coverage and provided them with additional evidence. The results were communicated to the investigation team and the evidence was added to the finalised barrier and booster lists as additional evidence.

3.5. PRIOR BUILDING

3.5.1. INTRODUCTION

The prior building process took place during one day with the core team members. Once completed, the teams were able to calculate prior beliefs of coverage in the OTP and TSFP in Ukhiya and Teknaf. With this information, they were then able to calculate the required sample size for Stage 3 (wide area survey).

The process followed and the calculations used are explained in greater detail in the Methodology section. This section presents the finalised table of barriers and boosters and the weights (or scores) of the individual factors in the barrier and booster lists, the concept maps and a the prior building results.

3.5.2. BARRIERS AND BOOSTERS FOR OTP AND TSFP PROGRAMMES

The final list of barriers and boosters are listed in Table 14. Where relevant, barriers or boosters which are specific only to the OTP or the TSFP are marked. However the majority of factors are applicable to both programmes as both programmes are managed by the same outreach and facility staff.

The triangulation information for each factor is displayed in the table along with the average weight attributed to the factor attributed by the teams. The number following the abbreviation indicates the number of times the relevant factor was mentioned by the key informants (e.g. KCP³ indicates that the factor was mentioned during interviews with 3 Key community personnel). Table 13 contains an explanation of the abbreviations.

Table 13: Key for triangulation in barriers and boosters table

Abbrev's	Full meaning	Description
METHODS		
S	Semi structured interview	Interview conducted with maximum 2 people using interview guide
C	Case study	Case study with defaulter or CNR case
F	Focus Group Discussion	Discussions conducted with 3 or more people using interview guide
I	Informal interview	Informal interview with key informant without interview guide
O	Observation	Based on observation by core team member
Q	Quantitative data	Evidence available in quantitative data
KEY INFORMANTS		
BNF	Beneficiary	Individual SAM or MAM carer
Carers	SAM or MAM carers	Groups of 3 or more SAM or MAM carers
CM	Community members	Groups of male or female community members
CMP	Community medical personnel	Including traditional healers, pharmacists, traditional birth attendants and village doctors
CNS	Community nutrition staff	Including CNWs and CNVs
GoB	Government of Bangladesh health staff	Including CHCPs, Health Assistants, Family Welfare Advisors and SACMOs
KCP	Key community person	Including village leaders, religious leaders and teachers
MM	Model mothers	
NC	Nutrition Coordinators	Technical and implementing partner nutrition programme coordinators
SCN	Stabilisation Centre Nurse	
SD	SAM defaulters	

Table 14: Barriers and boosters affecting coverage of OTP and TSFP, Ukhiya and Teknaf, March 2019

BARRIERS					BOOSTERS				
FACTORS	Method	Key Informant	Location	Weight	FACTORS	Method	Key Informant	Location	Weight
A. Key community members are not included in sensitizations (eg. Men community and religious leaders, teachers) including other family members.	C ¹ ,S ¹⁴ ,F ¹	GoB ⁵ ,SD ¹ , CNS ³ , NC ¹ ,CM ¹ ,KCP ³	UK ¹² ,TE ⁴	3	A. Good knowledge about the causes of malnutrition, Malnutrition caused by: Lack of hygiene, lack of breastfeeding, mothers cares, lack of food intake, diarrhea, fever, vomiting.	F ²⁵ , S ⁴¹ ,C ¹	GoB ⁴ , CMP ¹⁵ , CNS ⁸ , SAM CNR ¹ ,CM ¹³ , NC ¹ , Carers ¹¹ ,KCP ⁶ , MM ¹	UK ¹⁰ ,TE ²³	4
B. Lack of knowledge + awareness about malnutrition lead to misconceptions about malnutrition that lead to stigmatization.	S ¹³ , F ³	GoB ⁵ , CM ¹ , CNS ¹ , CMP ² , KCP ¹ , Carers ⁴ , NC ¹ , SCN ¹	UK ⁸ , TE ⁸	2	B. Malnutrition is considered to be a disease which requires medical treatment	F ²⁴ , S ³⁹	GoB ¹¹ , KCP ⁸ , CNS ⁶ ,CMP ⁸ , CM ¹³ ,NC ¹ , Carers ¹¹	UK ³¹ ,TE ²⁹	4
C. Preference for care with unregistered practitioners.	F ⁸ , S ¹⁰ , C ¹	Carers ³ , CM ³ , CMP ⁷ , KCP ³ ,CNS ³	UK ¹⁴ , TE ³	3	C. Malnutrition is not stigmatized.	F ⁷ ,S ¹⁵	GoB ³ ,CM ⁴ ,KCP ² ,CN S ³ ,Carers ³ , CMP ⁵ , NC ¹ , SCN ¹	UK ¹³ ,TE ⁹	2
D. Distance and access related factors associated with lower admission and defaulters (hilly areas, bad roads, lack of funds for transport cost etc.).	C ⁴ , F ⁸ , S ³⁰	GoB ¹⁰ , Carers ⁴ , KCP ² , NC ⁴ , CMP ³ , SD ¹ , CNS ¹¹ , CM ⁶ , SCN ¹	UK ²³ , TE ¹⁹	4	D. Mother key decision maker/ family (in some cases husband encourages to admission)	F ⁹ ,S ¹¹ ,C ¹	GoB ² ,CM ² ,CMP ¹ ,CN S ⁶ ,Carers ⁶ , SD ¹	UK ¹³ ,TE ⁷	2.5
E. Mothers earning livelihood leads to default or no admission.	O ¹ , S ¹ , C ²	GoB ¹ , SD ² , CMP ¹	UK ¹ , TE ³	1.5	E. Positive perception of program in community (careers see improvement in children + intend to continue to cure) Careers of cured cases promote program to others.	F ³⁴ ,S ³⁶ ,O ¹	GoB ⁴ ,KCP ¹⁰ ,CNS ⁶ ,C MP ⁸ ,SCN ¹ , Carers ²⁴ , NC ³ , CM ¹²	UK ⁴² ,TE ²⁵	3.5
F. Superstition associated with common childhood diseases (Pneumonia/ malnutrition + other communicable diseases).	F ⁴ , S ¹³	GoB ² , Carers ¹ , CNS ⁴ , KCP ⁴ , CM ³ , CMP ³	UK ¹⁰ ,TE ⁷	2.5	F. Good understanding of program in community (understand different between WSB++ and NT + admission criteria).	F ¹³ ,S ⁹	GoB ¹ , CM ⁸ , NC ¹ , CNS ² ,KCP ² ,Carers ⁶ , CMP ⁴	UK ¹² ,TE ¹¹	2.5
G. Father is key decision maker for childhood diseases (husband refused led to default).	F ⁴ , S ⁵ , C ¹	GoB ¹ , Carers ³ , CNS ⁴ , CM ¹	UK ⁸ ,TE ¹	1.5	G. Sensitizations take place in the community which inform community members about CMAM + about acute malnutrition (sensitizations tools available + sensitizations completed by local women)	F ²³ , S ⁶⁷ ,C ¹	GoB ¹⁶ ,KCP ¹² ,MM ¹ ,C NS ²⁵ ,Carers ¹⁹ , NC ¹ , CM ⁵ , CMP ¹⁴ , SCN ² ,	UK ⁴⁸ ,TE ³⁵	4

BARRIERS					BOOSTERS				
FACTORS	Method	Key Informant	Location	Weight	FACTORS	Method	Key Informant	Location	Weight
H. Misconceptions about CMAM program (NGOs make profit, pushti makes child sick)+ missionary objectives.	S ¹³ , F ²	GoB ¹ , Carers ¹ , CNS ⁸ , CMP ³ , CM ¹ , NC ¹	UK ¹¹ , TE ³	2	H. Child likes WSB++ TSFP only	F ⁷ , S ² , O ¹	Carers ⁷ , CNS ¹ , CM ¹ , KCP ¹	UK ⁶ , TE ⁴	2
I. Carers do not come to CNC as they think CMAM is only for poor families + other misunderstandings	S ⁹ , F ⁵ , O ¹	CNS ¹ , CM ³ , Carers ² , CMP ⁵ , KCP ⁵	UK ¹³ , TE ⁴	3	I. Child likes NT OTP only	F ⁵ , S ¹	Carers ³ , CM ² , MM ¹	UK ² , TE ⁴	1.5
J. Infrequent screening + sensitization activities (especially after Rohingya influx) + lack of incentives.	F ⁴ , S ⁷	NC ¹ , CM ¹ , KCP ¹ , Carers ² , CMP ² , CNS ³	UK ¹¹ , TE ¹	2.5	J. Community leaders play a role in sensitizations + encourages careers to continue treatment	S ¹¹	CNS ³ , GoB ² , MM ¹ , CMP ³ , KCP ¹	UK ² , TE ⁹	2
K. Rohingya influx increased staff turnover leading to reduced screening + follow up in community + Quality of Care in CNC (especially in Teknaf long length of stay).	S ¹⁹	Q ⁷ , CMP ² , GoB ⁴ , NC ⁴ , CNS ⁸ , MM ¹	UK ⁶ , TE ⁹	3.5	K. Preference for registered health services (govt. clinic, private clinic)	F ² , S ⁴	CM ¹ , CMP ³ , KCP ¹ , Carers ¹	UK ⁵ , TE ¹	1
L. Quality problems related to CNC structure (lack of covered waiting space, poor storage facilities, no water supply and toilets).	F ¹ , S ⁶ , O ²	GoB ⁴ , CMP ¹ , CNS ² , NC ¹ , CM ¹	UK ⁵ , TE ⁴	2	L. Additional sensitizations completed by Govt. of Bangladesh	S ³	GoB ³	TE ³	1
M. Quality challenges related to staff (staff not trained, inappropriate behavior, incorrect protocol followed).	S ⁵ , F ² , O ²	NC ² , Carers ² , CNS ² , BNF ¹ , GoB ¹	UK ³ , TE ⁴	2	M. CNV conducted regular effective follow up at BNFs homes (leading to short LoS before cure Ukhiya OTP 6 weeks TSFP 12 weeks)	F ¹⁵ , S ²⁶ , Q ²	GoB ⁶ , Carers ¹⁰ , CNS ¹⁷ , KCP ¹ , CM ⁴ , CMP ²	UK ²⁷ , TE ¹⁶	3.5
N. Village leader do not play a role in sensitizing community.	S ⁷	GoB ² , KCP ¹ , CNS ¹ , CMP ² , MM ¹	UK ⁶ , TE ¹	1.5	N. Screening conducted regularly in communities + timely admissions Ukhiya OTP (tools available, CNVs refer correctly etc, including Model Mothers)	F ²⁸ , S ⁴⁹ , Q ¹	GoB ⁸ , CNS ¹⁹ , KCP ⁷ , CMP ⁹ , Carers ²² , SCN ¹ , CM ⁷	UK ⁴⁶ , TE ²⁹	4
O. Rohingya people sell WSB++ and NT in the market for very cheap prices/local traders sell WSB++ and NT door-to-door TSFP only	S ²⁸ , F ¹⁶	CNS ¹⁰ , GoB ⁴ , Carers ³ , CM ¹⁰ , NC ² , KCP ⁴ , MM ¹ , CMP ⁸	UK ²⁰ , TE ²¹	4	O. CNC staff have positive behavior during sensitizations + share correct information (e.g. do not share products)	F ²⁵ , S ⁶ , I ¹	CNS ² , Carers ²⁴ , CM ⁴ , KCP ²	UK ¹⁶ , TE ¹⁶	3

BARRIERS					BOOSTERS				
FACTORS	Method	Key Informant	Location	Weight	FACTORS	Method	Key Informant	Location	Weight
P. Belief by careers that malnourished children will recover naturally and therefore do not go to CNC	I ¹	Carer ¹	TE ¹	1	P. CMAM program works effectively in tripartite partnership	S ¹¹	CNS ⁶ ,NC ³ ,GoB ² ,MM ¹	UK ⁶ ,TE ⁵	2
					Q. Male community members + village leaders sensitized about program	F ¹ ,S ⁴	CNS ¹ ,CMP ¹ ,CM ¹ ,KC ^{p2}	UK ⁴ ,TE ¹	1.5
					R. Good quality of service at CNC (all necessary equipment's available, no stock outs, short waiting time, improved availability of services after Rohingya response) leading to good performance	O ¹ ,F ¹² ,S ⁶ ,Q ²	GoB ⁶ ,CNS ⁴ ,Carers ¹¹ ,CM ¹	UK ¹⁹ ,TE ⁵	3
					S. Effective + regular training + supervision provided to CNC staff	S ²²	GoB ¹⁰ ,CMP ¹ , CNS ⁹ ,NC ¹	UK ¹⁴ ,TE ⁵	3
					T. CNC staff proud to serve community +improve health of malnourished children	S ¹⁸ ,F ²	GoB ² , NC ² , CNS ¹¹ ,KCP ² ,MM ² ,Carers ¹	UK ¹⁰ ,TE ⁹	2
					U. Nutrition facility easily accessible	F ⁶ ,S ¹	Carers ⁶	UK ¹ ,TE ⁵	1
					V. Other family members available to look after other children.	F ³	CM ² ,Carers ²	UK ¹ ,TE ²	1
		TOTAL OTP		52			TOTAL OTP		35
		TOTAL TSFP		52.5			TOTAL TSFP		39

3.5.3 CONCEPT MAPS

With the information from the barriers and boosters lists, the team drew two concept maps which demonstrated how different factors impacted the coverage of the programme. One concept map was prepared for positive factors and one for negative factors.

In addition to helping the core team to understand how different factors affect coverage, the concept maps were also used to calculate the a prior belief. The positive links were totalled and the negative links were totalled and the prior was calculated using the calculation in the methodology section (Section 2.2).

3.5.6 PRIOR ESTIMATES

The “prior contributing elements” described in the Methodology in Section 2.2 provided two prior estimates for the OTP and the TSFP. The average of these was then calculated to find the “Prior mode”.

The prior contributing elements for each of the methods used and the prior mode are shown in Table 15 for the OTP and Table 16 for the TSFP.

Table 15: Prior contributing elements, OTP in Ukhiya and Teknaf

	Positive factors	Negative factors	Prior estimate
OTP “prior” prior			70%
Simple barriers and boosters	84	60	62%
Weighted barriers and boosters	52	35	58.5%
Concept Map	48	46	51%
Mind Map	63	47	58%
Prior mode			60%

Table 16: Prior contributing elements, TSFP in Ukhiya and Teknaf

	Positive factors	Negative factors	Prior estimate
TSFP “prior” prior			70%
Simple Barriers and boosters	84	64	60%
Weighted barriers and boosters	52.5	39	56.8%
Concept Map	49	52	48.5%
Mind Map	61	46	57.5%
Prior mode			58.6%

The prior mode for the TSFP was estimated to be slightly lower than the OTP prior mode. This is mainly due to the fact that the team believed that the sale of large quantities of nutrition products in markets (mostly WSB++ due to the large volumes of the product distributed to the refugee population) in the host community would have a negative impact on TSFP coverage but not necessarily on OTP coverage.

3.5.7. CALCULATION OF WIDE AREA SURVEY SAMPLE SIZE

As described in the methodology, the minimum and maximum prior values were estimated using two methods: the histogram method (for the TSFP) and a fixed range of probable values (for the OTP).

The estimated values, precisions and required sample sizes are shown in Table 17.

Table 17: Prior modes, minimum and maximum probable values and Stage 3 sample sizes

	OTP	TSFP
Prior mode	60%	58.6%
Minimum probable value	85%	80%
Maximum probable value	35%	38%
Alpha prior	20.1	28.5
Beta prior	13.5	20.0
Precision	12%	10%
Wide area survey sample size	32	47

Once the wide area survey sample sizes had been calculated, the team was then able to plan Stage 3 data collection based on the OTP sample size (as described in the Methodology).

3.6. WIDE AREA SURVEY RESULTS

3.6.1. INTRODUCTION

The wide area survey took 6 data collection teams 4 days to complete. The teams succeeded in visiting all 30 villages and in measuring 3,865 children. The village-by-village results are shown in Annex 5. This section summarises the wide area survey findings and outlines the final steps to calculate the overall coverage estimates for OTP and TSFP.

3.6.2 WIDE AREA SURVEY SUMMARY

Table 18 shows the cases found during the wide area survey. The results are combined for Ukhiya and Teknaf. Rout was calculated using the formula included in the methodology.

Table 18: Summary of wide area survey results, Ukhiya and Teknaf

	OTP	TSFP
Cin (Cases in programme)	10	69
Cout (Cases not in programme)	10	96
Rin (Recovering cases still in programme)	6	31
Rout (Cases that have recovered naturally not in the programme (estimated figure))	1	14
Total	27	210

The suggested sample size for OTP was 32 cases (based on a precision of 12%). A total sample of 26 OTP cases were found by the end of the wide area survey and so the survey team were not able to meet the required sample size. This was primarily due to the fact that the

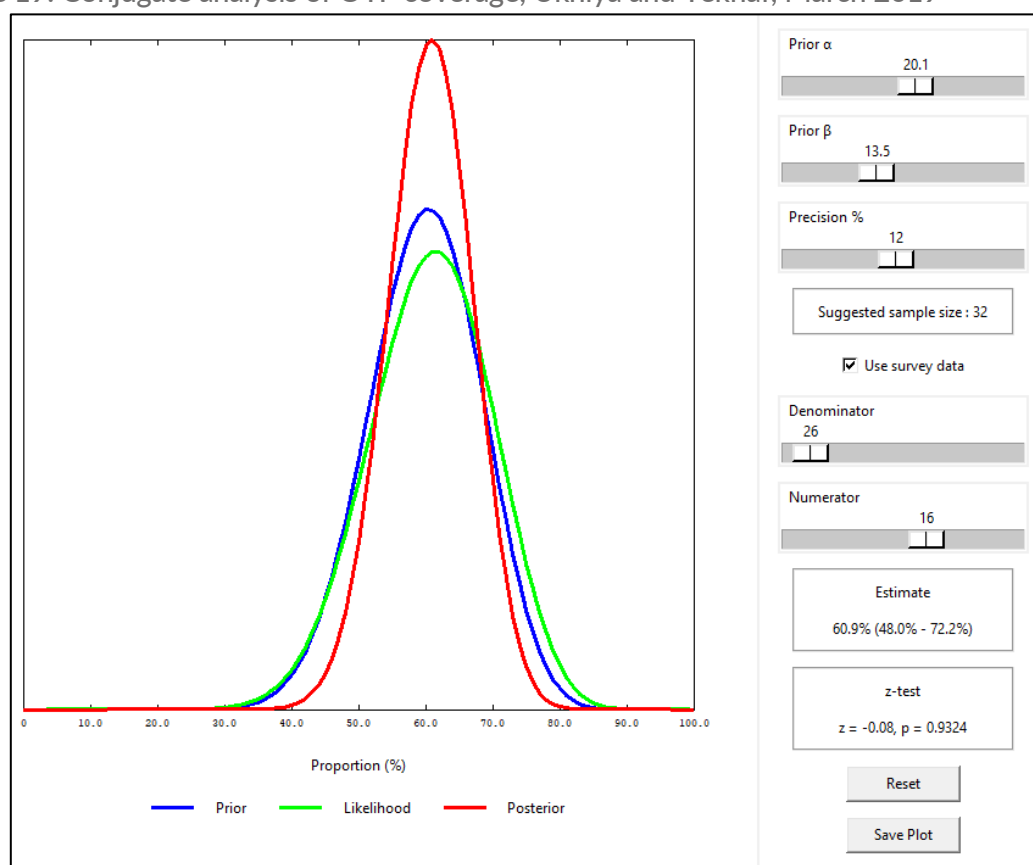
prevalence of SAM by MUAC at the time of the survey was lower than expected (a prevalence of 0.5% was used). If the sample size is not reached, the usual protocol to follow is to visit additional villages until the required sample size is reached. This was not possible in Ukhiya and Teknaf due to logistical and time constraints.

A total of 196 TSFP cases were identified during the wide area survey. Based on the cases found and on the calculation in the methodology, it was possible to estimate that there were 14 recovering MAM cases who had recovered without participating in the TSFP (Rout).

3.6.3. OTP COVERAGE ESTIMATE AND RESULTS ANALYSIS

Despite not reaching the sample size it was still possible to review how the OTP wide area survey results interacted with the prior estimation. Figure 19 shows the final conjugate analysis with the wide area survey results (also known as the Likelihood survey) displayed as the green curve. As the Likelihood curve falls within the blue curve (the Prior belief established by the team as described in Section 3.5), it is possible to say that the Likelihood supports the Prior. Therefore it was possible to use the posterior estimate (the red curve) to estimate coverage of the OTP.

Figure 19: Conjugate analysis of OTP coverage, Ukhiya and Teknaf, March 2019



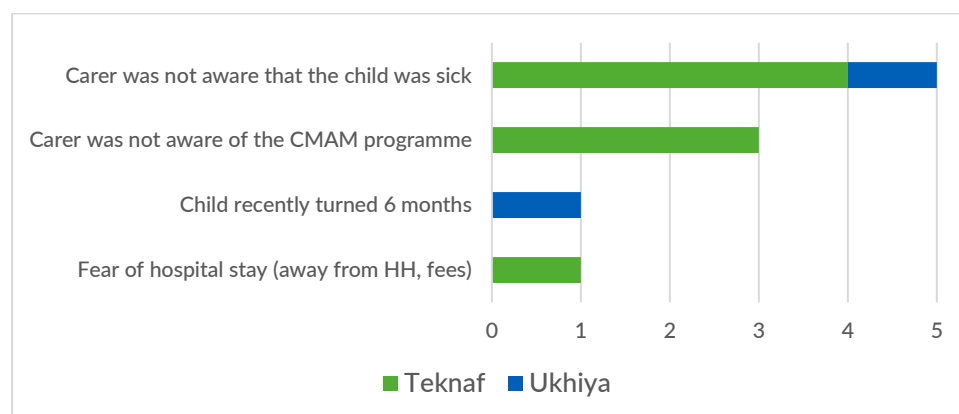
Therefore it is possible to say that the final coverage estimate for the OTP in Ukhiya and Teknaf with a 95% credibility interval (CI) was:

60.9% (95%CI: 48-72.2%)

This estimation had a final precision of 12% and a P value of 0.9324.

For each of the OTP cases identified during the survey, a questionnaire was conducted with the carer to determine the primary reasons for non-attendance (for the 10 non-covered cases) and the primary reason for attendance (for the 16 covered cases). The primary reasons for non-attendance are summarised in Figure 20.

Figure 20: Reasons for non-attendance to OTP for non-covered SAM cases, Ukhiya and Teknaf SQUEAC, March 2019 (n=10)



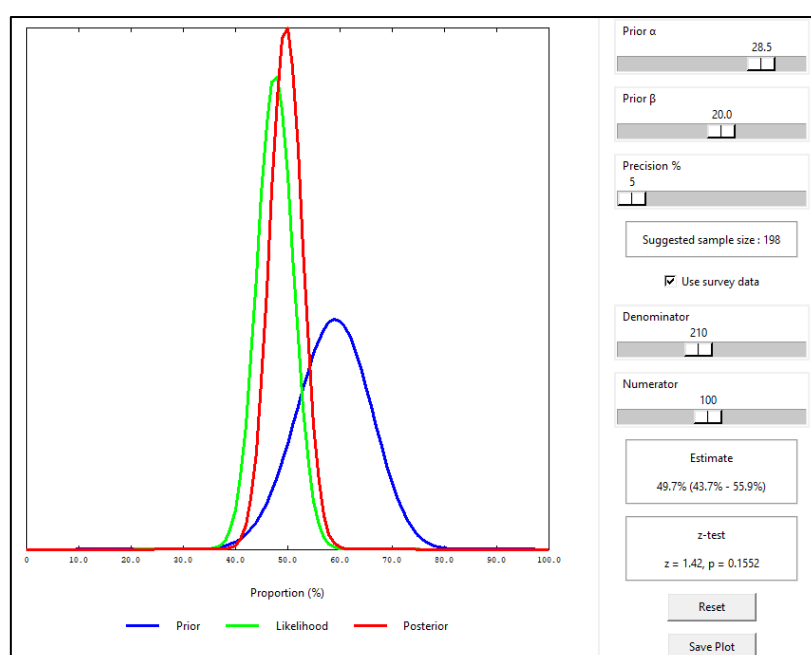
Out of the 10 non-covered SAM cases, 8 were located in Teknaf and 2 in Ukhiya. The first two reasons (for 8 of the 10 non-covered SAM cases identified) were due to a lack of awareness that the child was sick and a lack of awareness of the programme.

The primary reasons for attendance to the OTP are summarised in Figure 23 with the results from the TSFP.

3.6.4. TSFP COVERAGE ESTIMATE AND RESULTS ANALYSIS

Based on the survey results shown in Table 18, the numerator for the TSFP wide area survey was 100 (69 + 31) and the denominator was 210. These figures were added to the Bayes calculated to calculate a final coverage estimate. The conjugate analysis is shown in Figure 21.

Figure 21: Conjugate analysis of TSFP coverage, Ukhiya and Teknaf, March 2019



Following the SQUEAC investigation in March 2019, the final coverage estimate for the TSFP in Ukhiya and Teknaf with a 95% Credibility interval (CI) was:

49.7% (95% CI: 43.7-55.9%)

The final estimate had a precision of 5% and a P value of 0.1552.

The plot indicates that the prior estimate of 58.6% was higher than the actual coverage estimate of the TSFP based on the wide area survey (approximately 48%). However the two estimates were sufficiently similar to be able to complete the conjugate analysis and estimate coverage (as proven by the fact that the P value was greater than 0.05).

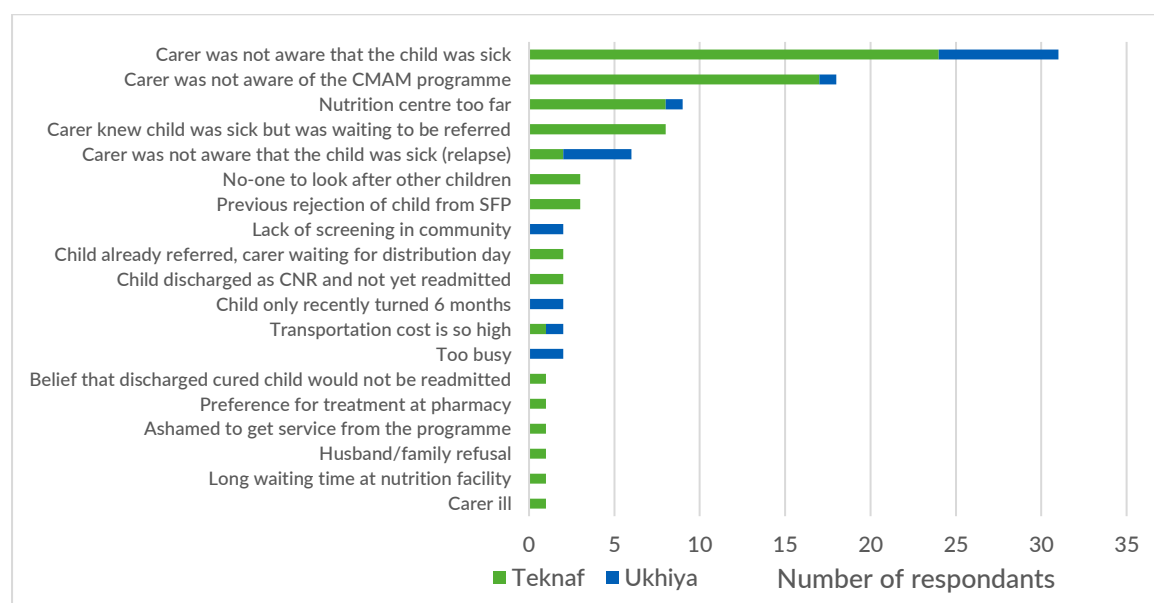
The reasons for non-attendance of each of the non-covered MAM cases identified during the wide area survey are summarised in Figure 22. Out of the 96 non-covered MAM cases identified, 76 were located in Teknaf and 20 in Ukhiya.

As shown in Figure 22, the primary reason for non-coverage in both upazilas (for 31 cases) was a lack of awareness that the child was MAM at the time of the survey. This was followed by a lack of awareness of the programme (18 cases), but 17 of these cases were in Teknaf. These reasons highlight a lack of screening and sensitisations in certain communities but particularly in Teknaf.

Distance was also found to be an important factor affecting coverage with carers of 9 cases (8 in Teknaf and 1 in Ukhiya) saying that they knew of the existence of the programme but could not or would not go to the CNC as it was too far to travel. Also in Teknaf, carers of 8 MAM cases stated that they knew that their child was MAM and they knew about the programme, however they were waiting to be referred by a CNV. This suggests a lack of understanding by the community about the programme which indicates that the messaging included in sensitisations should be reviewed.

Another important reason for non-attendance which came from the interviews was that carers of MAM cases were not aware that their child had relapsed into MAM (mentioned by 6 carers, 4 of whom were in Ukhiya).

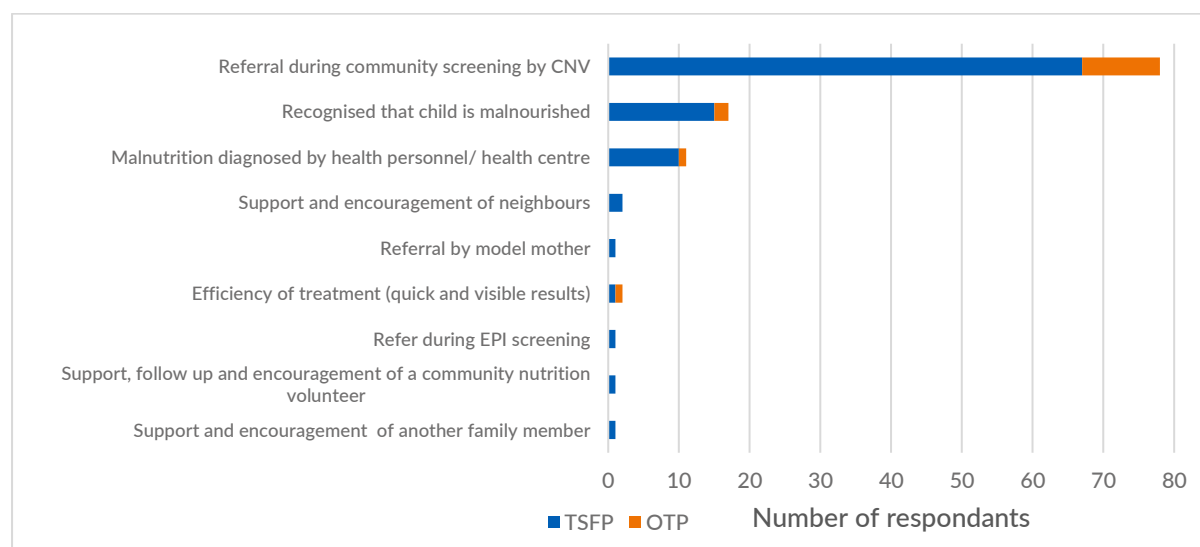
Figure 22: Reasons for non-attendance to TSFP for non-covered MAM cases, Ukhiya and Teknaf SQUEAC, March 2019 (n=96)



3.6.5. REASONS FOR PARTICIPATION IN THE PROGRAMMES

The reasons for participation in the OTP and TSFP were gathered by investigation teams using the covered cases questionnaire. The reasons provided by all covered cases (including 26 OTP cases and 100 TSFP cases) are summarised in Figure 23.

Table 23: Reasons for participation in the OTP and TSFP, Ukhiya and Teknaf, March 2019 (n=126)



Out of all covered cases identified during the wide area survey, 62% of all carers interviewed stated that they had gone to the CNC because they were referred by a CNV during a community screening. This indicates that CNVs are conducting screenings extensively throughout the two upazilas. Smaller numbers of carers said that their decision to go was based on knowledge that their children was malnourished (17 cases) or that their child had been diagnosed during a visit to the health centre (11 cases).

While the results are positive overall and reflect the hard work completed by the community outreach teams to recruit cases into the programmes, they also indicate that admissions to the programmes are reliant on regular screening at cluster level. Considering that the CMAM programme has been operating for more than 7 years in the host communities of Ukhiya and Teknaf, it would be preferable to see a greater number of covered cases entering the programme because the carers were aware that the child was sick or because of referrals by neighbours or model mothers.

3.6.6. FREQUENCY OF SCREENING IN HOME CLUSTERS

All carers of cases identified during the wide area survey, including covered and non-covered cases, were asked if their child had been screened previously in their home cluster. If they said yes, the interviewers then asked who had screened them and when they had last been screened.

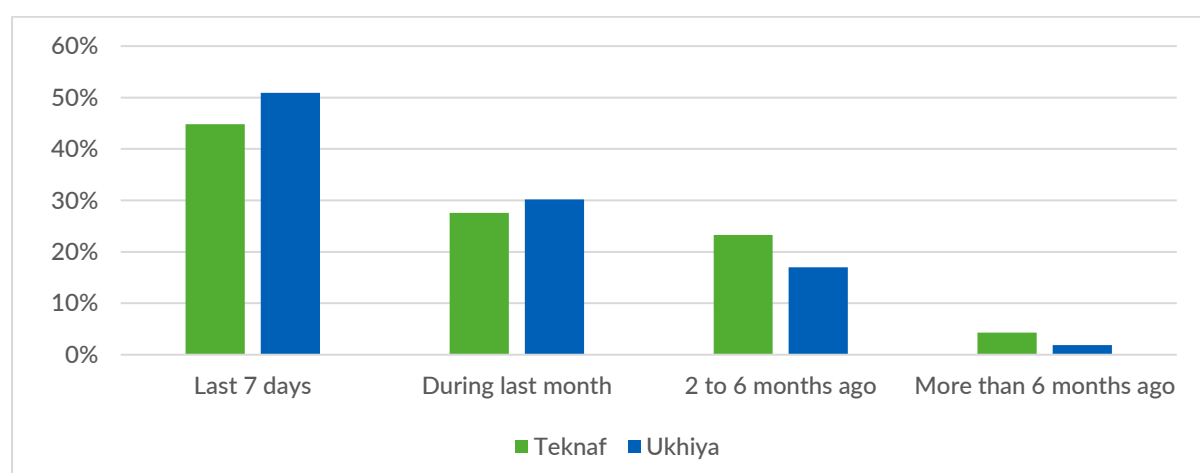
Table 19: Summary of results to question “Has your child been measured with this tape in your home cluster previously?”, Ukhiya and Teknaf, March 2019

	UKHIYA	TEKNAF	OVERALL
Yes	87%	72%	76%
No	13%	28%	24%

The results to the first question are shown in Table 19 by upazila. As shown by the results, across the two upazilas, 1 in 4 cases identified had not been measured previously in their clusters. However, proportionally, more cases had been measured in Ukhiya (nearly 9 out of 10) compared to Teknaf (7 out of 10). This therefore confirms that in recent months, Teknaf had suffered from a shortage of CNVs more so than Ukhiya resulting in fewer children being screened.

The regularity of screening also seemed slightly longer in Teknaf compared to Ukhiya. Figure 24 shows the period elapsed since the last screening for the carers who confirmed that their child had been screened in Ukhiya and Teknaf.

Figure 24: Period since last screening



Out of the 169 who said that their child had been screened in the two upazilas, all but six carers said that it had been a Community Nutrition Volunteer who had screened their child.

3.6.7. PREVIOUS PARTICIPATION IN THE PROGRAMME

Questions were included in both the covered and non-covered questionnaires which asked if the child had been previously enrolled in the CMAM programme. A summary of responses are shown in Table 20.

Table 20: Previous participation in CMAM programme

	SAM covered cases	SAM non-covered cases	MAM covered cases	MAM non-covered cases	TOTAL
Total cases found	16	10	100	96	222
Number of cases who had participated in programme previously	5	1	24	23	53
Number of cases who had been discharged as cured and who had re-entered the programme (Readmission or relapse cases)	5	1	21	17	44

Table 20 shows that out of the 222 cases identified during the assessment, 53 (24%) had participated in the programme previously. Out of these, 44 cases (20%) had been discharged as cured (from the OTP or TSFP as relevant) and had then become SAM / MAM again. This indicates that there is a relatively high readmission rate in both the OTP and TSFP. It was hard

to identify during this survey the primary causes of children becoming SAM or MAM again following successful treatment. But based on the information gathered during the CNR case studies and on the feedback from data collection teams, it is likely that the poor sanitary conditions and unclean food preparation areas in many households were contributing to the high rates of readmission. This raises questions about the quality of the messaging or the delivery of messaging during sensitisations.

3.6.8. SPATIAL DISTRIBUTION OF COVERAGE

Based on the wide area survey results it is possible to combine the results by union and identify potentially high and low coverage unions within each of the upazilas. It is also possible to establish approximate coverage estimates by upazila.

Table 21 shows the combined OTP and TSFP covered and non-covered cases by union and the coverage estimate by union (NB this is a proxy coverage estimate only).

Table 21: Covered and non-covered cases by union, Ukhiya and Teknaf, March 2019

Upazila	Union	Villages visited	Children screened	Total cases identified	Covered cases	Non-covered cases	Proxy coverage estimate
Ukhiya	Palong khali	3	384	28	17	11	61%
	Jalia palong union	1	135	11	4	7	36%
	Raja palong union	2	233	14	12	2	86%
	Holdiapalong union	1	113	8	6	2	75%
Teknaf	Subrang union	7	941	45	21	24	47%
	Nhilla union	4	588	21	6	15	29%
	Teknaf Pouroshova	2	393	21	8	13	38%
	Teknaf Sadar union	4	514	40	23	17	58%
	Baharchara Union	2	128	6	2	4	33%
	Whykong union	4	436	28	17	11	61%

As shown by the union-by-union wide area survey results, there is some variation in coverage between unions. Although these results should only serve as an indication of high and low coverage unions as in some unions the sample size was very low as only one village was visited.

Based on the wide area survey results along, the proxy coverage estimate for the CMAM programme (including OTP and TSFP) in Ukhiya is:

$$Ukhiya \text{ proxy coverage estimate} = \frac{39}{61} \times 100 = 64\%$$

Meanwhile Teknaf's proxy coverage estimate is:

$$Teknaf \text{ proxy coverage estimate} = \frac{77}{161} \times 100 = 48\%$$

Therefore, these results indicate that overall, based on the wide area survey results, the coverage of the CMAM programme is lower in Teknaf than in Ukhiya, particularly in the unions of Nhilla, Baharchara and Teknaf Pouroshova.

Coverage in Ukhiya seems to be greater than 50% throughout the upazila, except in Jaliapalong union where coverage drops to 36%. However this only includes the results from one village

and so should be interpreted with caution. The two unions with the highest coverage were Raja palong and Holdiapalong in Ukhiya.

3.7. ESTIMATION OF OTP AND TSFP MET NEED

Using the formula described in the Methodology section, it is possible to calculate the “Met Need” for the OTP and TSFP in Ukhiya and Teknaf. The results are shown in Table 22. Also included in the table are the estimated “Met Needs” of both programmes in 2015 and 2017 (based on the previous coverage surveys).

Table 22: Met Need of OTP and TSFP in Ukhiya and Teknaf for 2015, 2017 and 2019

	OTP	TSFP
Overall cure rate (2018)	86.7%	86.3%
Coverage estimate (March 2019)	60.9%	49.7%
Met Need 2019	52.8%	42.9%
Met Need 2017	63.8%	65.2%
Met Need 2015	63.6%	65.9%

This shows that the OTP is meeting the needs of approximately 53% of SAM children in Ukhiya and Teknaf (i.e. approximately 53% of SAM cases in the upazilas are being admitted AND discharged as cured from the OTP). For the TSFP, the estimated figure is 43%.

Therefore, even though the cure rate for both programmes is well within the Sphere standards, the true impact of the programme is limited by the treatment coverage estimates of the programmes. This is particularly the case for the TSFP. Overall, cure rates have remained similar across the assessment periods of the coverage assessments. However with the significant drop in coverage of the TSFP, the Met Need has dropped from 65.2% in 2017 to 42.9% in 2019.

4. DISCUSSION

The SQUEAC assessment conducted in Ukhiya and Teknaf upazilas in March 2019 indicates that treatment coverage of the CMAM programme has reduced in both the OTP and TSFP since the coverage assessment in 2017.

The coverage of the OTP was estimated to be 60.9% (95% CI: 48-72.2%). The precision of this estimate was 12% which is relatively wide (inaccurate) as it was difficult to find the necessary sample size of SAM cases using MUAC and presence of oedema to identify cases. The 2017 OTP coverage estimate in Ukhiya and Teknaf was 72.5% (95% CI: 61.2-81.3%).

The coverage of the TSFP was estimated to be 49.7% (95% CI: 43.7-55.9%). The precision of the final estimate was 5% which, for a coverage estimate, is narrow (accurate). This is because the team was able to find a large sample of MAM cases during the wide area survey. The 2017 TSFP coverage estimate in Ukhiya and Teknaf was 73.1% (95% CI: 65.1-75.15%).

While there has been an unfortunate drop in coverage, especially in the TSFP, it is important to remember that these coverage estimates are still relatively good. The OTP coverage estimate is well above the Sphere standard for coverage in rural contexts (50%). And while the TSFP coverage has dropped below 50%, it is still impressive for a MAM treatment programme considering the number of MAM children in the upazilas and the difficulties faced in recognising and recruiting MAM cases in rural contexts.

The 2019 SQUEAC investigation aimed to understand how coverage of the CMAM had evolved during the previous 24 months and to understand how the programme barriers facing communities which were identified in previous surveys had changed.

It became clear during the investigation that the large influx of Rohingya refugees into the registered and makeshift camps during the second half of 2017 and 2018 had an impact on the implementation of the CMAM programme in the host communities. The programme data indicated that admissions and, to a lesser extent, programme exits varied significantly during the second half of 2017 and 2018. This was primarily due to high staff turnover in the Community Nutrition Centres (CNCs) in the host community, both of CNWs and CNVs. During 2018, and at the time of the investigation in 2019, remuneration for CNWs and CNVs was higher in the camps in comparison with the host community. Therefore many CMAM programme staff left their posts in the host community CMAM programme. This was confirmed during many SSIs with CNC staff and CNVs and with CMAM programme staff at upazila and union level during the investigation. One of the Stage 2 hypothesis tests confirmed that in catchment areas where there were CNV shortages and the burden on existing CNVs was higher, treatment coverage was lower. Finally, the wide area survey found that areas more affected by staff absence (mostly in Teknaf) there was a greater proportion of non-covered cases.

The assessment teams also heard that because of the increased availability of work in the makeshift and registered camps, carers of malnourished children were leaving their children with neighbours or family members to go and work in the camps which led to increased defaults from the CMAM programme.

The SQUEAC investigation also showed that the Rohingya influx and the resulting activities in the refugee camps had an impact on the lives and, in some cases, health-seeking behaviours, of the host community.

Accessibility of CNCs was affected by the increased cost of transport and increased traffic on the access roads to the camps, which are also the main roads connecting the villages and towns of the host community. A number of carers of cases who had defaulted from the programme attributed the cause of defaulting to the cost of transport, which had increased since the influx. Distance was also the third most common reason for non-attendance cited by carers of non-covered MAM cases during the wide area survey.

Another factor had a negative impact on coverage was the increased availability of nutrition products in local markets in host communities. A range of key informants throughout the two upazilas confirmed that they had seen Rohingya refugees selling WSB++ and, in some cases, NT. It was found that the sale of WSB++ at very cheap prices (20-30 taka per bag) impacted coverage of the TSFP negatively in 2 ways: 1. Carers with MAM cases enrolled in the TSFP preferred to buy the WSB++ from the market rather than expend the funds on transport or incur the opportunity cost of going to the CNC. 2. Large quantities of cheap WSB++ for sale meant that host community members were more likely to share the product amongst family members (or animals) and less likely to feed it exclusively to their MAM child. This risked prolonging treatment and increasing the chance of their child being discharged as CNR.

The investigation also found that pre-existing barriers to coverage (which were identified during the previous assessments) were still preventing uptake of CMAM programme services. Based on the FGDs and SSIs conducted with community members, it became clear that in most unions, the CMAM programme sensitisations focus only on female community members and that men and key community members (e.g. village leaders, religious leaders and teachers are excluded). Linked to this, it was also found that community members in some communities still had misconceptions about childhood diseases, which, in some cases, lead to malnourished children being stigmatised.

In many communities there was also a preference for health seeking behaviour through unregistered health practitioners (e.g. village doctors and village pharmacists) which, in some cases, was fuelled by mistrust of NGOs. During the wide area survey, there was also found to be a relatively high percentage of cases (20%) who had previously been discharged as cured from the CMAM programme but who had become SAM or MAM again. This confirms that many households still have very poor sanitary conditions and food preparation areas which are leading to children becoming ill. But it also indicates that the messaging in courtyard sessions relating to the prevention of acute malnutrition is either inadequate or is not delivered by CNVs sufficiently.

In spite of the factors mentioned above, on balance, the knowledge about malnutrition and the perception of the CMAM programme within the community was positive. The majority of community members could recognise the causes, signs and symptoms of malnutrition and knew that it was a condition that required medical treatment. Carers with children in the programme had very positive views about the treatment and about the programme in general, with some saying that they recommend it to carers of children in a similar condition to theirs. It was also clear that in the *majority* of communities visited, CNVs visit all clusters to conduct screenings and sensitisations. This was confirmed by nearly all community members, including

“Key community people” such as village leaders and Imams, even if they were not directly involved.

However there was evidence that screening and sensitisation is not taking place consistently across all unions and villages. One in four carers of cases identified during the wide area survey (222 cases in total) stated that their child had not been measured with a MUAC tape in their home cluster previously. This provides strong evidence that the community outreach strategy does not reach 100% of the population. The proportion of children screened previously was lower in Teknaf (72%) than Ukhiya (87%).

Teknaf was also found to have lower coverage than Ukhiya based on the wide area survey results. Based on survey data alone, the combined (OTP + TSFP) proxy coverage estimate was 64% for Ukhiya and 48% for Teknaf. Unions in Teknaf where coverage was found to be especially low included Nhilla, Baharchara, Teknaf Pouroshova and Subrang. The WFP national focal point believed that this was due to the ongoing staff shortages in these unions and to ongoing strengthening of TSFP services in some unions in Teknaf following the Rohingya influx.

This SQUEAC investigation succeeded in shedding light on the impact of the Rohingya influx on the CMAM programme in host communities, highlighting in particular the negative impact that increased staff turnover has had on the recruitment of new cases. The main findings of the survey were presented to core team members and to other partners during a results presentation workshop on Monday 25th March. Following the presentation, the participants discussed and proposed recommendations and activities to address the key barriers to access identified during the survey. These activities are included in the Recommendations section.

5. RECOMMENDATIONS AND ACTION PLAN

The dissemination workshop was held on 25th March to present the results and findings of the SQUEAC assessment and to formulate recommendations and activities to improve CMAM service uptake. Participants included the Upazila health focal point of the Government of Bangladesh, SQUEAC core team leaders and partner agencies.

Participants divided into three groups based on the challenges that emerged from the assessment ((1) Human resources and quality of care; (2) Community outreach – sensitisations and screenings; (3) Access related factors and sale of WSB++) and developed and proposed activities to address the specific challenges.

The recommendations presented by each group are summarised below. In all cases, the activities proposed in the tables are applicable to both Ukhiya and Teknaf.

(1) Human resources and quality of care

Challenge identified during SQUEAC	Activities to address challenge	Progress indicator	Source of verification	Responsible party/ies	Timeframe
<i>High staff turnover</i>	Increase staff salaries	- Motivated staff - Screening rate	- Longevity of staff - Admissions register	Implementing partner “SHED” Technical Support from ACF & WFP	July 2019
	Provide gifts / rewards to best performed staff				
	CNW/V Awards based on regular staff appraisals				
<i>Quality of service delivery is poor</i>	Develop CNC awards	- Stakeholders' satisfaction - Beneficiaries' satisfaction	- CNC monthly performance OTP/TSFP - Monitoring visits - Home visits	CNC Stakeholders and implementing partner “SHED”	ASAP Measure progress indicator quarterly
	Conduct training needs assessment				
	Availability of service delivery				
<i>Poor organisation at nutrition facilities</i>	Segregate distribution area	- Crowd management - Proper service	- Proper documentation - Physical observation	Government of Bangladesh and implementing partner “SHED”	ASAP Measure progress indicator half yearly.
	Need designated space for distribution and counselling				
	Organise waiting area				
<i>Relapse / readmission rate is high</i>	Community sensitisation (Ex. Courtyard session, IYCF education)	Reduction of relapse/readmission rates	- Reduction in morbidity - Monthly register	Implementing partner “SHED”	ASAP Measure progress indicator quarterly.
	Follow up				
	Increase KAP				

Other activities proposed during discussion to reduce High staff turnover and poor quality of service:

- Review and increase supportive supervision and on the job monitoring
- Review frequencies of trainings
- Encourage peer to peer learning amongst CNW/Vs

(2) Community outreach – sensitisations and screenings

Challenge identified during SQUEAC	Activities to address challenge	Progress indicator	Source of verification	Responsible party/ies	Timeframe
<i>Sensitisation should be improved and made more interactive</i>	Reduce number of clusters per CNV	Early detection of active cases	Screening and admissions database	Implementing partner "SHED"	By July 2019
	Improve the quality of the courtyard sessions	Number of participants who attend sessions	Monitoring of sensitisation sessions		
<i>Community not offered snacks / incentives at CMAM sensitisations</i>	Engage local female influencers	Number of self-referrals	Weekly / monthly register checks	Union Nutrition Supervisor and MO of implementing partner	By June 2019
	Organise theatre sessions to communicate messages				
<i>Key community members not included in sensitisations</i>	Orientation sessions for key community members +	Number of participants	Verify the register	UNS, TCN, ACF, WFP	By October 2019
<i>Other community groups excluded from sensitisations</i>	Establish male committees with other local community members and sensitise regularly	Number of participants	Male group meeting report Number of participants	Community mobilisers, TCN, UNS, MIS, ACF, WFP	By October 2019
	Include all schools and madrasas in school nutrition programme	Number of participants	School nutrition programme report		
<i>Clusters without CNVs not screened for long periods</i>	- Immediate recruitment - Increase salary for CNWs and CNVs to prevent staff turnover	Staff stay is minimum one year	HR record	Implementing partner	Ongoing
<i>Very few referrals from model mothers</i>	Provide some incentives and other materials for their engagement	Referrals from Model mothers	Admission database	IP, UNS, CM	Ongoing

Other activities proposed during discussion:

Challenge	Activities
<i>Sensitisation should be improved and made more interactive</i>	- Conduct quarterly review of quantitative data to assess impact of sensitisations - Complete formative research in order to review content of sensitisations (unchanged in last 5 years) - Clarify messaging of sensitisation - Consider adjusting sensitisation messages depending on different key informants - Consider changing platforms for delivery of sensitisations
<i>Very few referrals from model mothers</i>	- Consider strengthening the capacity of model mothers and adjusting roles
<i>Clusters without CNVs not screened for long periods</i>	- Identify hard to reach areas and areas without CNV support and implement “crash” screenings
General	- Review / refresh community mobilisation strategy - Establish community mobilisation SOPs: How should Comm Mob strategy work? How do different actors interact? - Consider employing other groups to conduct screenings - Consider creation of village health welfare committees

(3) Access related factors and sale of WSB++

Challenge identified during SQUEAC	Activities to address challenge	Location	Progress indicator	Source of verification	Responsible party/ies	Timeframe
<i>WSB++ sold for very cheap prices in local markets</i>	Community sensitisation on WSB++, NT during courtyard sessions	Community level	No of courtyard sessions	Community Screening report	CM / CNW / CNV	By June 2019
	Involvement of local level stakeholders	Community level	Number of sensitisation meetings	Meeting minutes	CM / UNS	
	Cut WSB++ packets at distribution and require return of empty NT packets	CNC level of refugee camp	Number of empty packets (by camp level)	Distribution data	Distribution / measurer	
<i>WSB++ is increasingly perceived as food in host communities</i>	Sensitise during conduct home visits	Community	Number of home visits completed	Report	CNV / CNW	By June 2019
	Sensitise during courtyard sessions	CNC / community	Courtyard session report	Report	CNV / CNW	
<i>Distance and access related factors associated with lower admissions</i>	Household / cluster mapping of poor access areas	Community level	Number of defaulters	Cluster map	TCN / SPO / PO / Nurse / CNW	By July 2019
	Mobile distribution centres at poor access areas	Poor access areas	Number of mobile distributions completed	Distribution and admission report	CNW / CNV	
<i>High rate of CNR and relapse due to poor hygiene</i>	Increase awareness of risk of CNR and relapse during sensitisations	Community and CNC level	Number of CNR in report	Performance rates reports	UNS / CNW / CNV	By May 2019

Other activities proposed during discussion:

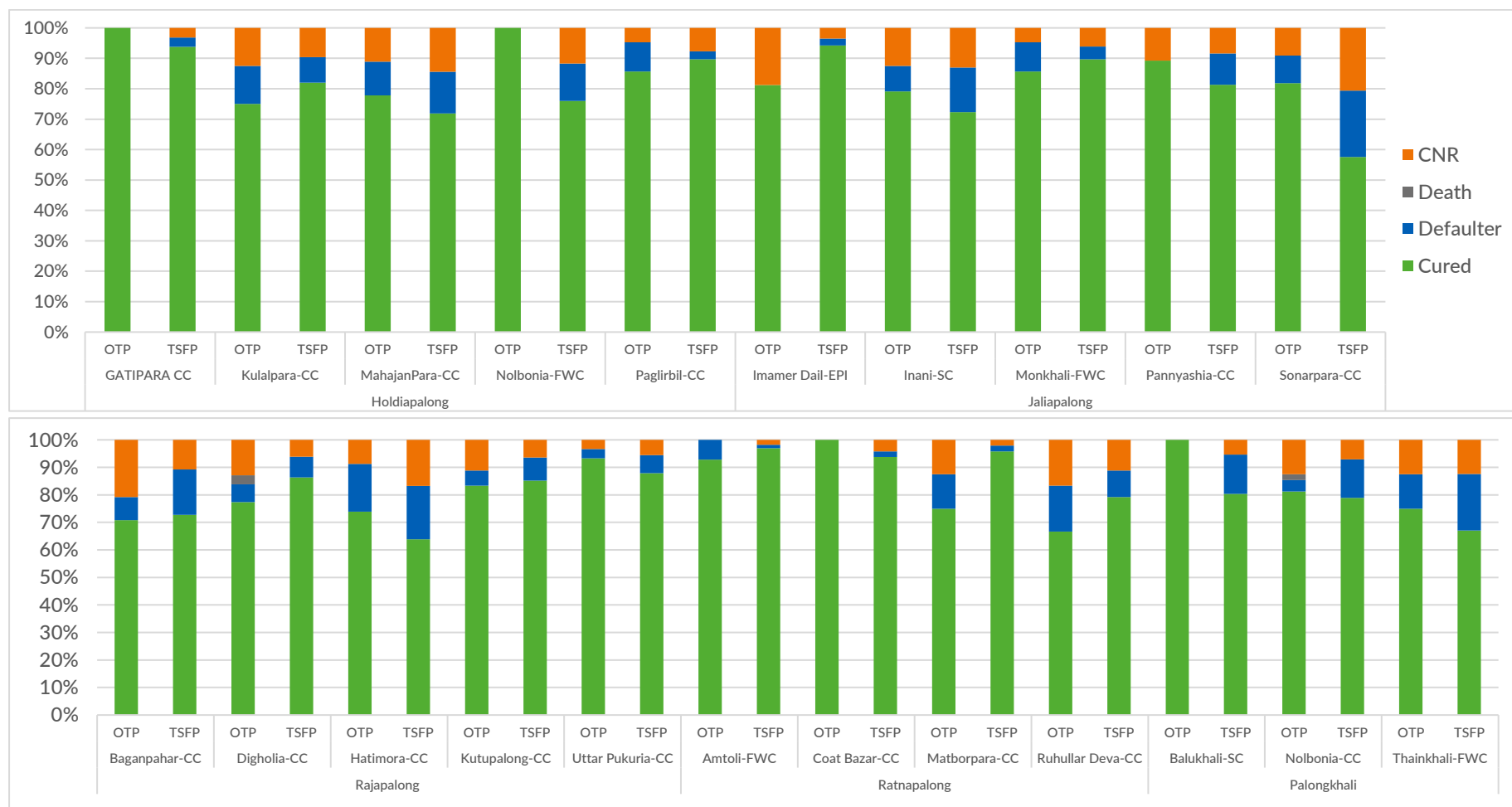
Challenge	Activities
<i>WSB++ sold for very cheap prices in local markets</i>	- WFP will be conducting a survey on the in Camps soon. Study will look at: Use of products at home / would cash handouts be a better option? / would it be possible to add names of cases to packets?

6. ANNEXES

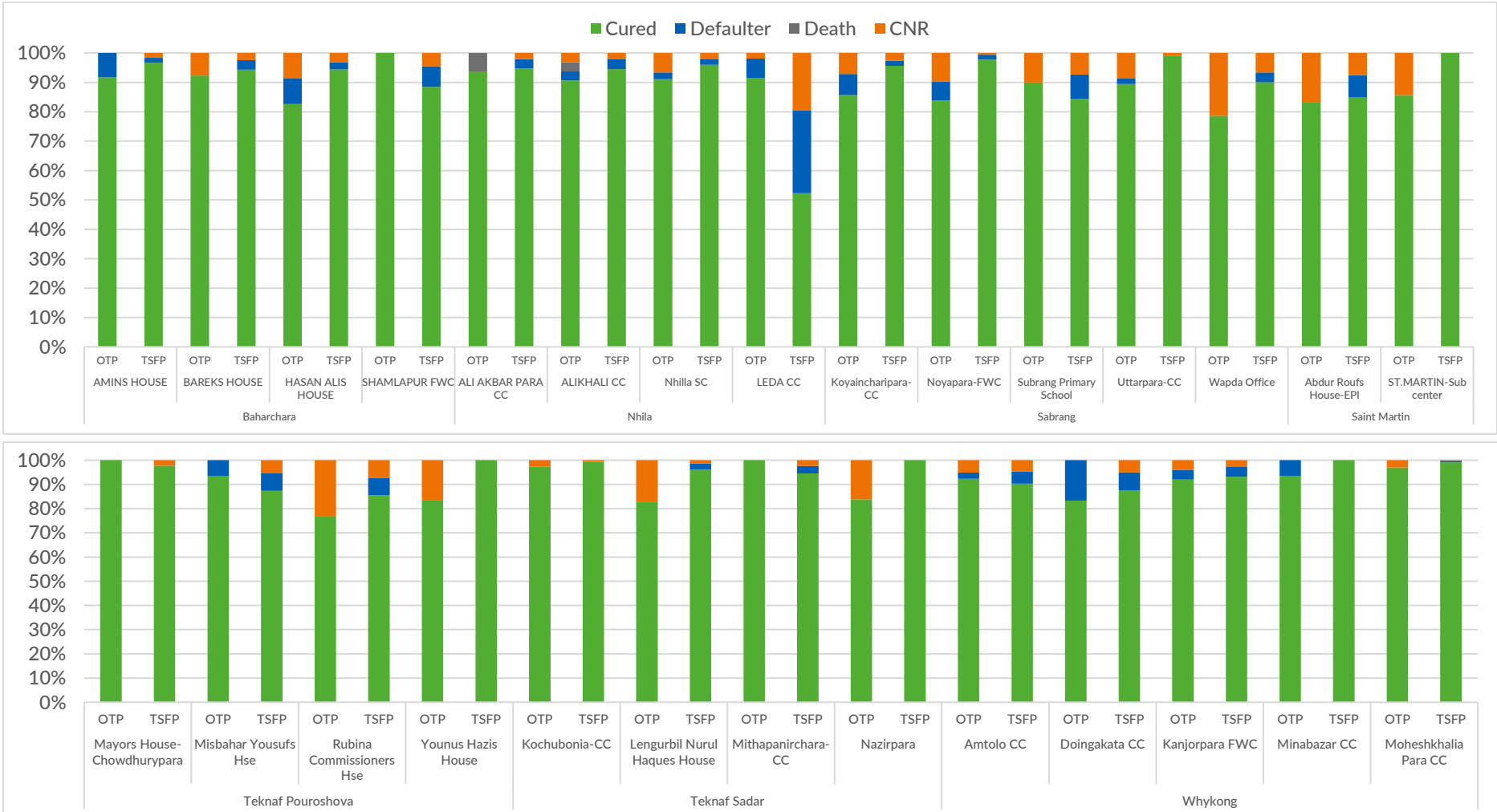
ANNEX 1: LIST OF SQUEAC PARTICIPANTS

	Name	Responsibility	Organization	Cell Number
Coordination	Hugh Lort Phillips	Coordinator	ACF	
	Md. Lalan Miah	Coordinator	ACF	01744264933
	MD. Rayhan Mostak	Coordinator	ACF	01848303052
	Md. Saiful Islam Talukder	Supervisor	ACF	01885997980
Ukhiya				
1	Md. Ashraful Hassan Sabbir	Lead Investigator	ACF- Teknaf	01670838770
	Md. Aminur Rahman	Lead Investigator	ACF- Camp	'01845045838
	Md.Nazrul Islam	Quantitative	ACF	01716493778
	Khinur Akter Ginok	Qualitative	ACF	01858284003
	Amiya Jiban Chakma	Quantitative	ACF	01777693488
	Mino Ara Begum	Quantitative	ACF	01882424021
2	GM Mosharraf Hossain	Lead Investigation	ACF-CAMP	01723777578
	Md. Abdul Manik	Lead Investigation	ACF- Moheskhali	01729681228
	Ibrahim Rafat Makki	Qualitative	ACF	01828018354
	Antu Dhar	Qualitative	ACF	01858020990
	Mahamoda Akter Joli	Qualitative	ACF	01621654340
3	Mohammad Mahbubur Rahman	Lead Investigation	ACF-Teknaf	01839865302
	Kazi Enamul Hasan Sharif	Lead Investigation	ACF- Moheskhali	01716198665
	Md. Khaled Rashid	Qualitative	Interview	01762618117
	Sabiha Jannat	Qualitative	ACF	01825160177
	Kiron Bikash Chakma	Quantitative	ACF	01823726458
	Yasmin Akter	Quantitative	ACF	01856024350
Teknaf				
4	Ali Azam	Lead Investigation	SHED	01823004960
	Smita Roy	Lead Investigation	WFP	01796983736
	Kanon Chakma	Qualitative	ACF	01843474284
	Ommy Humura Somy	Qualitative	ACF	01828242648
	Md. Shamiul Islam	Quantitative	ACF	01928711022
	Hasna Riaz Hadis	Quantitative	ACF	01867321742
5	Md. Imran bin Kayes	Lead Investigation	WFP	01829695222
	A.S.M. Safiqur Rahman	Lead Investigation	ACF-Ukhiya	01840609017
	Ajad Uddin	Qualitative	ACF	01627275969
	Papeya Mollik	Qualitative	ACF	01881-220269
	Md. Abu Hanif Miah	Organizing and support	ACF	01799609191
	Md. Hasan Miah	Organizing and support	ACF	01745006859
6	Bappa Kumar Mondal	Lead Investigation	ACF-Ukhiya	01737873343
	Kamrunnahr Shima	Lead Investigation	SARPV- Moheskhali	01887995551
	Ismail Mohammad Parvez	Qualitative	ACF	01813135038
	Soheli Akter	Qualitative	ACF	01815014137
	Mahbub Hasan	Quantitative	ACF	01717408007
	Zasmin Akter Putul	Quantitative	ACF	01850535731

ANNEX 2: PERFORMANCE RATES FOR OTP AND TSFP IN UKHIYA BY UNION, JANUARY 2018-JANUARY 2019



ANNEX 3: PERFORMANCE RATES FOR OTP AND TSFP IN TEKNAF BY UNION, JANUARY 2018-JANUARY 2019



ANNEX 4: SUMMARY OF DEFAULTER CASE STUDY FINDINGS

Upazila	Union	Name of CNC	Date of Admission & Discharge	Reason for Defaulter
OTP				
Teknaf	Sabrang	Uttarpara	- Admission: 01/ 10/19 - Discharge: 05/11/19 - Length of Stay : 91 days	Transferred to Camp as father was Rohingya but mother was local.
Teknaf	Whykong	Dengkata CC	- Admission: NA - Discharge: NA - Length of Stay : NA	- Firstly, the centre is situated quite far from residence. Transport cost is also a big factor to access the centre. - Mother have to go work, so that she couldn't take proper care of her child. - The child is cared by neighbour while mother is at work, she gives instruction to feed her child timely but they don't care. - Mother told that, "I couldn't feed my child properly as well as couldn't complete the food within prescribed time that's why I stopped to take food for my child." - Mother is separated from her husband.
Ukhiya	Ratnapalong	Amtali FWC	- Admission: 06.05.18 - Discharge: 27.05.18 - Length of Stay : 28 days	- For rainy season and also accessibility through muddy road was difficult. - Long distance from nutrition centre (OTP) - Husband are not aware about nutrition program and also nutritional knowledge. - Lack of sensitization and follow up activity in that area.
TSFP				
Teknaf	Sabrang	Subrang PSC	- Admission: 05.01.18 - Discharge: NA - Length of Stay: 70 days	- Far distance from beneficiary house to nutrition centre. - Caregivers can buy nutrition foods from local market and it cost less than transport cost. - It takes too much time to go to nutrition centre. - Transport cost to go to nutrition centre getting burden.
Teknaf	Whykong	Amtoli CC	- Admission: NA - Discharge: NA - Length of Stay: 28 days	- Breakdown of supply of WSB++ happened for some days and centre provided WSB+ to beneficiary for the shortage period. Some carers refused to take WSB+ and stopped to come in centre. - Some NGOs giving money to carers and their family. For this reason carers showing less interest to come to nutrition and going to other NGO program on distribution day
Ukhiya	Jalaipalong	Sonarpara	- Admission: 14.01.2019 - Discharge: 11.02.2019 - Length of Stay : 7 days	- Carers don't have time to come to CNC (Mother have shop and father is a fisher) - No other member in the house
Ukhiya	Ratnapalong	Hatimora	Admission: NA	Long distance to reach in CNC

			• Discharge: NA • Length of Stay : NA	• Caregiver (mother) works outside, as husband stays with another wife • Less family care from husband make her busier with managing own livelihood • Due to polygamy, less attention to previous family and child
Ukhiya	Ratnapalong	Baganpahar	• Admission: 05-09-2018 • Discharge: 26-12-18 • Length of Stay : 113 days	• Family shifted to new house in another area from family house

ANNEX 5: SUMMARY OF CNR CASE STUDIES, UKHIYA AND TEKNAF, MARCH 2019

Upazila	Union	Name of CNC	Date of Admission & Discharge	Reason for CNR
OTP				
Teknaf	Teknaf Sadar	Nazirpara	- Admission: 18.09.18 - Discharge: 18.12.18 - Length of Stay : 91	- Premature birth (7th birth), lack of care and unhygienic environmental condition possibly leads to get the child sick over and over again; - Husband and wife are separated, so that Mother has to earn livelihood for her family (very poor);
Ukhiya	Jaliapalong	Sonarpara	- Admission: 19.11.18 - Discharge: 18.02.19 - Length of Stay : 90	- Frequently sick (fever, diarrhea) - Hygiene condition is not good - After referring to SC bnf was not willing to go to SC
Ukhiya	Palongkhali	Nolbonia	- Admission: November 2018 - Discharge: February 2019 - Length of Stay : 90	- Frequent Sickness (fever, diarrhea) - Very poor (can't get enough food), mother is a housemaid and father is a day labor - Baby don't get breast milk because mother is busy
Ukhiya	Rajapalong	Kutupalong	- Admission: October 2018 - Discharge: February 2019 - Length of Stay : 90	- Didn't get enough care (mother is paralyzed, baby didn't get enough breast milk) - Hygiene condition is not good - Frequent sickness - Very poor (can't buy enough food)
Ukhiya	Rajapalong	Baganpahar	- Admission: 18.07.18 - Discharge: 17.10.18 - Length of Stay : 92	- Frequent Diarrhea and fever - Unhygienic condition of house and poor hygiene practices - Irregular and improper amount NT Consumption - Loss of appetite
Ukhiya	Ratnapalong	Court Bazar CC	- Admission: 25.11.18 - Discharge: 24.02.19 - Length of Stay : 91 days	- Lack of knowledge on nutrition of caregiver's. - Caregiver does not know about feeding practice of NT and did not feed prescribed amount of NT. - Lack of sensitization and follow up activity in that area. - Caregiver is so much careless.
TSFP				
Teknaf	Subrang	Subrang PSC	- Admission: 21.09.17 - Discharge: February 8 - Length of Stay : 112 days	- Frequently falling in fever and fainting - Diarrhea - Family seniors want to stop taking nutrition food for more some days due to frequent falling in fever of the child.
Ukhiya	Rajapalong	Hatimora	- Admission: NA - Discharge: NA - Length of Stay : NA	- Mother has health problem during pregnancy - Child was affected with diseases (Diarrhea, Cough & fever)

ANNEX 6: LIST OF VILLAGES VISITED AND WIDE AREA SURVEY CASE FINDING RESULTS

Upazila	UNION	Village	CC	Total children screened (MUAC)	SAM	SAM	SAM	MAM	MAM	WN	OTP			TSFP		
					By MUAC	By oedema	TOTAL SAM	By MUAC	TOTAL MAM	Well nourished	SAM Cin	SAM Cout	SAM Rin	MAM Cin	MAM Cout	MAM Rin
Teknaf	Baharchara Union	Bara Dail	(Md. Amin's house) Morzina House CNC	63	0	0	0	4	4	59	0	0	0	1	3	0
Teknaf	Baharchara Union	Mathabhanga	Hazampara (Barek house) CNC	65	0	0	0	2	2	63	0	0	0	1	1	0
Ukhiya	Holdiapalong union	Patabari	Nolbonia UHSC	113	0	0	0	8	8	105	0	0	0	6	2	0
Ukhiya	Jalia palong union	Jalia Palong (Sonyo)	Painnasia CC & Sonarpara CC	135	1	0	1	8	8	126	1	0	1	0	7	2
Teknaf	Nhilla union	Ulochamari	Nhila UHSC	168	1	0	1	2	2	165	1	0	0	0	2	0
Teknaf	Nhilla union	Domdomia	Leda CC	151	0	0	0	7	7	144	0	0	0	1	6	0
Teknaf	Nhilla union	Lechuaprang	Nhila UHSC	226	2	0	2	6	6	218	1	1	0	1	5	1
Teknaf	Nhilla union	Nhilla Mogpara	Nhila UHSC	43	0	0	0	1	1	42	0	0	0	0	1	1
Ukhiya	Palong khali	Paschim Farir Bil	Nolbonia CC	137	3	0	3	6	6	128	2	1	0	4	2	3
Ukhiya	Palong khali	Ukhiarghat	Balukhali UHSC	91	2	0	2	5	5	84	1	1	0	2	3	1
Ukhiya	Palong khali	Anjuman	Nolbonia CC	156	1	0	1	6	6	149	1	0	0	2	4	1
Ukhiya	Raja palong union	Khairati	Baganpara CC	112	0	0	0	2	2	110	0	0	0	2	0	0
Ukhiya	Raja palong union	Tutur Bil	Court Bazar CC	121	1	0	1	9	9	111	1	0	1	7	2	1
Teknaf	Subrang union	Deguliar Bil	Noyapara FWC	60	1	0	1	2	2	57	0	1	0	1	1	0
Teknaf	Subrang union	Majher Para	Uttarpara CC	182	1	0	1	6	6	175	0	1	0	2	4	1
Teknaf	Subrang union	Benga Para	Subrang Primary School	58	0	0	0	2	2	56	0	0	0	1	1	0
Teknaf	Subrang union	Koanchhari Para	Koainchari Para CC	107	0	0	0	12	12	95	0	0	2	6	4	3
Teknaf	Subrang union	Zinnah Para	Noyapara FWC	108	0	0	0	1	1	107	0	0	0	0	1	2
Teknaf	Subrang union	Jalia Para	WAPDA Office(Shah parir Dip)	267	0	0	0	7	7	260	0	0	0	2	5	0
Teknaf	Subrang union	Paschim Uttar Para	Uttarpara CC	159	1	0	1	5	5	153	0	1	0	0	5	1
Teknaf	Teknaf Pouroshova	Islamabad	Rubina CNC	213	1	0	1	8	8	204	0	1	0	3	5	0
Teknaf	Teknaf Pouroshova	Olia Bad (Part)	Misbahar CNC	180	1	0	1	8	8	171	0	1	1	2	6	2
Teknaf	Teknaf Sadar union	Hankar Para (Part)	Kachubania CC	104	1	0	1	5	5	98	0	1	0	1	4	0
Teknaf	Teknaf Sadar union	Dail Para (Part)	Kachubania CC	113	0	0	0	5	5	108	0	0	0	2	3	0
Teknaf	Teknaf Sadar union	Lengurbil	Lengurbil CNC	140	2	0	2	13	13	125	1	1	1	5	7	2
Teknaf	Teknaf Sadar union	Razarchhara	Mitha Panirchara CC	157	0	0	0	12	12	145	0	0	0	8	1	3
Teknaf	Whykong union	Ghilatali	Amtali CC	107	0	0	0	4	4	103	0	0	0	0	4	0
Teknaf	Whykong union	Kharang Khali	Moheshkhalia Para CC	51	0	0	0	2	2	49	0	0	0	2	0	1
Teknaf	Whykong union	Nasor Para	Moheshkhalia Para CC	141	0	0	0	7	7	134	0	0	0	4	3	2
Teknaf	Whykong union	Whykong	Amtali CC	137	1	0	1	7	7	129	1	0	0	3	4	4
				3865	20	0	20	168	168	3673	10	10	6	69	96	31
											26			196		