



A Semi Quantitative Evaluation of Access and Coverage in the C Project CMAM Programme: Dadu District, Sindh Province, Pakistan

1 April - 21 April 2016

Type of investigation: SQUEAC covering the area of two research arms:

- Intervention Arm: iCCM by CHWs
- Control Arm: OTP treatment of SAM

Kenny Macfadyen
Action Against Hunger, ACF Pakistan



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Cover photo: Kenny Macfadyen, Dadu District. April 2016



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Abbreviations

ACF	Action Contre la Faim
CMAM	Community based Management of Acute Malnutrition
iCCM	Integrated Community Case Management
LHW	Lady Health Worker
MoH	Ministry of Health
MUAC	Mid-upper Arm Circumference
OTP	Outpatient Therapeutic treatment Programme
RUTF	Ready to Use Therapeutic Food
SAM	Severe Acute Malnutrition
SMART	Standardised Monitoring and Assessment of Relief and Transitions
SQUEAC	Semi Quantitative Evaluation of Access and Coverage
UC	Union Council

BBQ Barriers, Boosters and Questions

BF	Beneficiary (mother / caregiver)	CS	Case Study
CBO	Community Based Organisation	DO	Direct Observation
CL	Community Leader	FGD	Focus Group Discussion
CM	Community members: Men	IC	Informal Chat
CNV	Community Nutrition Volunteer	KI	Key Informant Interview
CV	Community Volunteer	SSI	Semi Structured Interview
CW	Community members: Women		
EM	Enumerator (direct observation)		
IM	Imam		
MO	Medical Officer		
TBA	Traditional Birth Attendant		
TC	Teacher		
TH	Traditional Healer		



Executive Summary

The findings of the SQUEAC (semi-quantitative evaluation of access and coverage) evaluation conducted by ACF in Dadu District, Sindh Province, Pakistan in April 2016 will help assess the coverage and effectiveness of the programme, including the treatment of malnutrition in integrated community case management (iCCM). The specific area of study was the six union councils (UCs) of the C Project, a cluster randomized control trial, split into the intervention arm (Gozo, Mitho Babar and Kandechuki UCs) and the control arm (Kolachi, Kakar and Sita Road UCs). ACF supports the national CMAM programme and the community health volunteers, known in Pakistan as Lady Health Workers (LHWs), in 30 of the 52 union councils in Dadu, a district with a population of 1.3 million, treating cases both at the OTP site (control arm) and at the Health House of LHWs at the village level (intervention arm).

The investigation found a number of factors acting as boosters and barriers to access treatment for severe acute malnutrition (SAM) in both research arms. The main themes emerging from the investigation included awareness of SAM as a disease that needs medical attention, awareness and acceptance of the CMAM services in the community, and the quality of care provided by the LHWs.

Boosters in the intervention arm, where LHWs deliver treatment locally at the Health House (not door to door but much closer than the OTP site for many villages), included awareness of SAM, awareness of the CMAM services provided by the LHW and acceptance of this programme, as well the ease of access to the Health House and the active mobilisation of the LHW. Communities having a positive attitude to the LHW was found to be a booster, as was strong outreach by the LHW. In the control arm the main boosters were again awareness of SAM and awareness and acceptance of the CMAM programme, successful referrals, regular community outreach and motivated volunteers. These boosters have their counterparts: the barriers to access.

One of the main barriers to access in the intervention arm related to poor quality of care provided by the LHW. The investigation also found that lack of coordination between key personnel, particularly in referring cases with complications, was a barrier. Poor outreach by LHWs, medicine (including RUTF) stock outs, sharing the RUTF between family members and distance to the Health House were also identified as barriers. In the control group the main barriers were poor outreach, distance to the OTP site and poor screening, including incorrect measurement of the middle upper arm circumference (MUAC) were found to have negative effects on the programme. In both research arms lack of awareness of SAM, the programme and lack of acceptance of the programme and the perception of RUTF as chocolate emerged as barriers.

A wide area survey was conducted to sample the control and intervention arms, finding 43 cases in the control arm (with 21 in the programme) and 41 in the intervention arm (16 in the programme). A conjugate analysis of these results and the first two stages of the investigation give us a single coverage estimation of 44.4% (CI 95%: 35.5% - 53.7%) in the Intervention and 52.4% (CI 95%: 43.5% - 61.1%) in the Control arm. This indicates that both the intervention and control arm have coverage rates around the Sphere standard (50% for a rural area). Though the intervention arm has seen an increase in coverage since last year (See table below), this rise is in tandem with the rise in the control group, showing that this increase in coverage in the intervention arm cannot be wholly attributed to the intervention of the C Project.

An action plan to improve coverage and access to treatment has been formulated to improve coverage in these six union councils (Annex 1). For the wider study of integrated malnutrition treatment into iCCM, a further investigation into the quality of care delivered by the LHWs and its effect on programme coverage should be undertaken to better understand why the hypothesis is not supported by this SQUEAC.

Single coverage estimate

(10% precision, 10% margin of error)		2015	2016	Union Councils
Intervention	40.6% (CI 95%: 29.9% - 52.2%)		44.4% (CI 95%: 35.5% - 53.7%)	Gozo, Mitho Babar, Kandichuki
Control	43.9 (CI 95%: 33.2% - 55.2%)		52.4% (CI 95%: 43.5% - 61.1%)	Kolachi, Kakar, Sita Road



Context

The C Project study area is located in Khairpur Nathan Shah and Mehar Tehsils in northern Dadu District, Sindh Province, Pakistan. Dadu borders Jamshoro District to the South and Balochistan Province to the West, separated by the Kherthar Mountains. The study area is in the barrage zone of the district, between the riverine area to the East and the mountains to the West. It is flat and rural with peri urban centres in each union council. The study has two research arms, the Intervention arm comprises three Union Councils: Gozo Mitho Babar and Kandichuki, the Control arm comprises another three: Kolachi, Kakar and Sita Road. The SQUEAC was conducted over three weeks in April 2016, with high temperatures of 43°C during the day.

The average village population is 163 and the average household size is 5.5. There are three major ethnic groups in Dadu: Sindhi, Balochi and Kerala. The predominant livelihood activities are agricultural in rural areas and trading in the urban centres. Islam is the predominant religion.

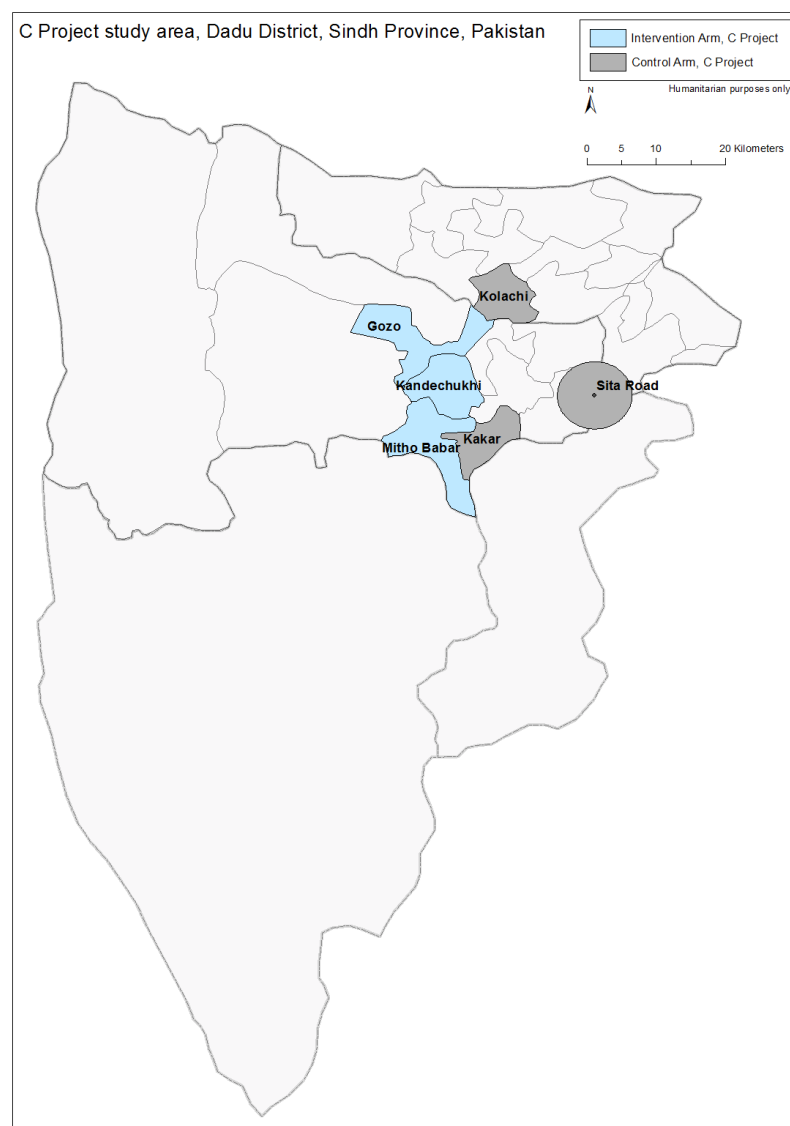


Figure 1: Study area, Dadu, Pakistan

Sita Road). The study aimed to produce an action plan to improve lifesaving assistance in the project area. The secondary objective of the study was to produce an end line coverage estimate for the intervention arm and the control arm.

Tribal killings, political assassinations and targeted attacks against health workers (specifically polio vaccination campaign workers) do happen. The malnutrition rate in Sindh province is the worst in Pakistan; the National Nutrition Survey conducted in 2011 indicated very high rates of Global Acute Malnutrition (17.5%) and Severe Acute Malnutrition (6.6%). A SMART survey conducted in 2014 found SAM rates in Dadu District to be 2.6% (WHZ score, -3 z and/or oedema) and 3.8% (MUAC, 115mm or oedema).¹

The 2015 SQUEAC can be found [here](#) and estimated coverage in the Intervention arm as 40.6% (CI: 29.9% - 52.2%) and in the Control arm as 43.9% (CI: 33.2% - 55.2%).²

The 2014 SQUEAC can be found [here](#). The study estimated coverage as MAS: 53.1% (CI: 41.9% - 63.7%).

Objectives

The Principal objective of the SQUEAC was to investigate the barriers and boosters to access and coverage in the six union councils of the C Project (Gozo, Mitho Babar, Kandichuki and Kolachi, Kakar,

¹ Basharat Hussain, SMART Survey, Dadu district, Sindh Province, Pakistan, November 2014. Download [here](#)

² ACF, Dadu District, Sindh Province, SQUEAC Report (both 2014 and 2015, ACF) URL: <http://www.coverage-monitoring.org/country/pakistan/>



Methodology

The SQUEAC method uses Bayes statistics in a three stage investigation. Stage 1 combines qualitative discussions and interviews and quantitative programme data to identify key themes, barriers and boosters to access and coverage. Stage 2 uses small studies to confirm hypotheses about the investigation's findings in Stage 1, forming a prior estimation of coverage without the need for a representational survey of the population. Finally Stage 3 uses a survey to produce a likelihood estimation of coverage. Combining these two estimations (prior and likelihood), we produce a Posterior estimation. The method is used to avoid the need for logistically challenging high sample sizes of frequentist statistics, and produce a large amount of knowledge about the programme, from which recommendations can be made.

Single coverage estimate

This SQUEAC uses the Single Coverage estimate method, as promoted in the CMAM journal *Field Exchange* issue 49.³ This introduces the calculation of previously SAM children who are now recovering out of the programme. As there is no way to confirm that these children were at one time SAM (as they were uncovered), recovering out ("R out") cases are estimated. This is done using the New Calculator developed by Mark Myatt.⁴

³ Safair Balegamire et al., *Field Exchange*, 'A single coverage estimator for use in SQUEAC, SLEAC and other CMAM coverage assessments,' Vol. 49 (Emergency Nutrition Network, Mar 2015) pp.81-84. Online version: [here](#)

⁴ Coverage Monitoring Network, 'New Coverage Calculator.' URL: <http://www.coverage-monitoring.org/2016/01/04/new-coverage-calculator/>



STAGE 1

Quantitative Data

During Stage 1 we looked at routine programme data and OTP admission cards to analyse trends in admissions, defaults, and treatment outcomes to inform the qualitative research.

Admission trends:

If we look at admissions data across the intervention period in both research arms we find a similar story of initial bump and decline followed by an increase in the second year, with a spike in admissions in August.

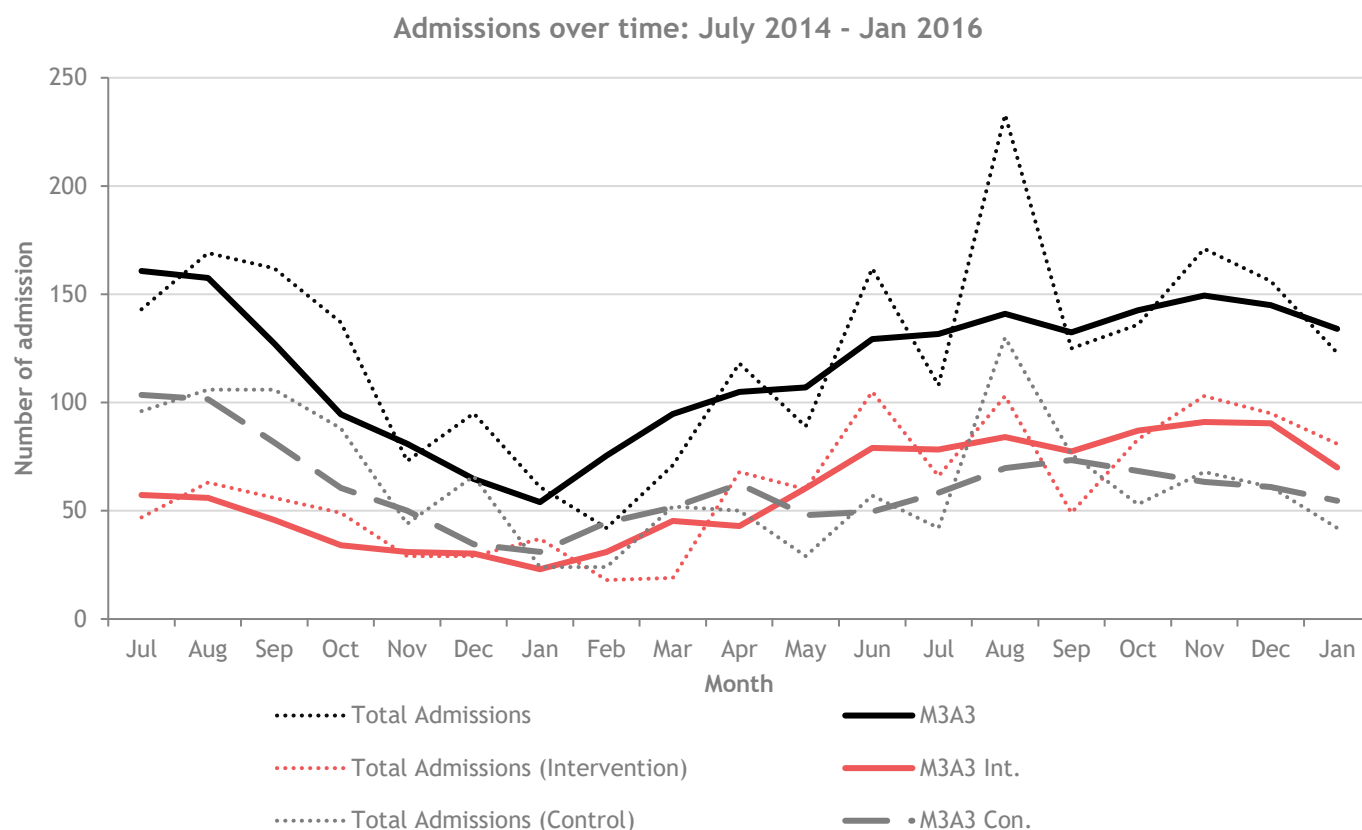


Figure 2: Admissions over time: Jul 2014 - Jan 2016

There were initially fewer admissions in the intervention group (49 fewer in July 2014, 43 in August, 50 in Sep and 39 in Oct) however this swapped; for most months in 2015 the intervention group recorded more admissions than the control. A key hypothesis of the C Project is that admissions would increase as the point of care for SAM was moved to primary care (village) level.

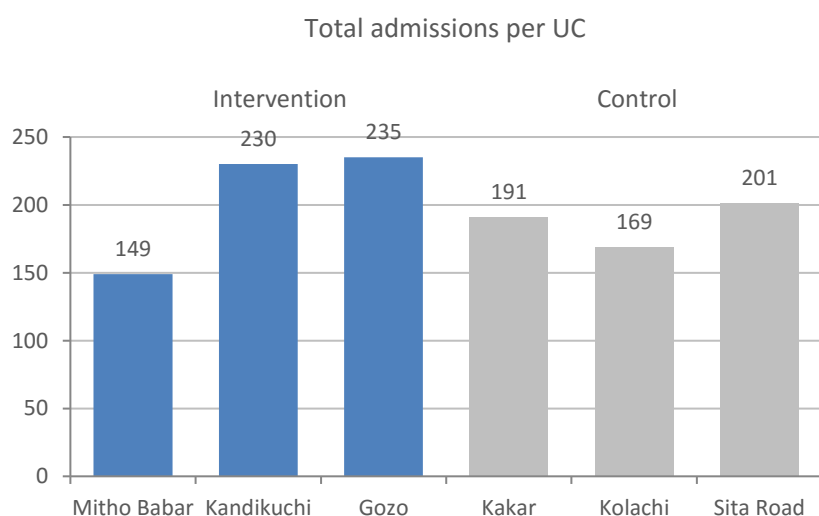


Figure 3: Total admissions per Union Council

The total number of admissions between Mar 2015 and Feb 2016 is 1,615 (866 in the Intervention, 749 in the Control). The average admission per month across both research arms was 134.6 (62 in the Intervention, 54 in the Control). It should be noted that the Union Councils do not have equal population sizes; Mitho Babar is the smallest of the six union councils.



Seasonal Calendar March 2014 to February 2015: Climate, Child Morbidity, Labour by Sex.⁵

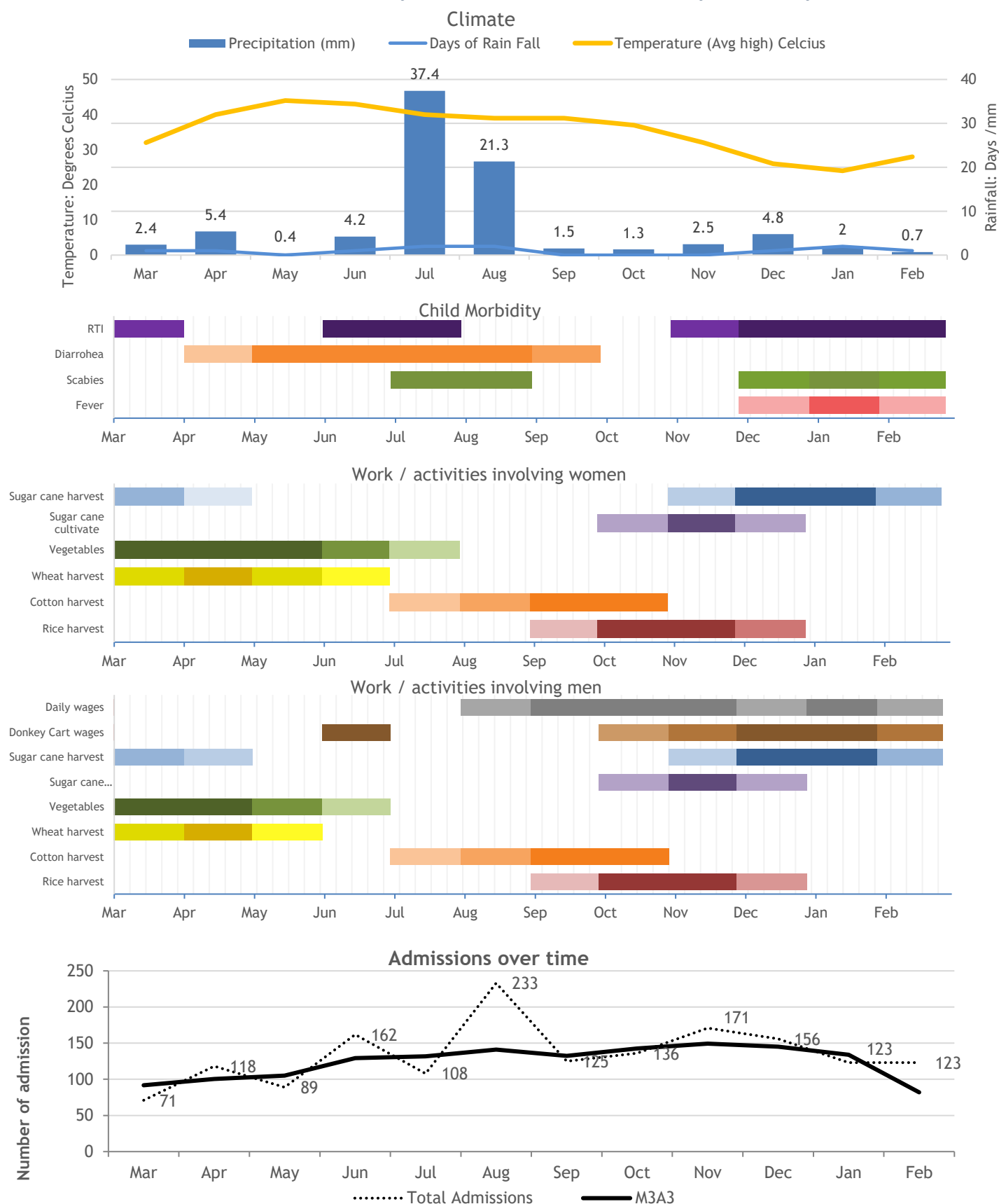


Figure 4: Seasonal Calendar: Dadu District

⁵ Gantt charts show intensity of each category, from 0 (blank) to 3 (darkest shade) as per participatory scoring.
Full seasonal calendar – Annex 2

In 2015 admissions rose from March to a peak for the C Project in August 2015 at 233 admissions. This peak matches a period of low activities and work for both men and women, and coincides with a period of child morbidity (RTI, diarrhoea and scabies). There is a general upward trend in admissions across the study period, and it seems that demand is not largely affected by seasonal events. This general trend obscures pastoral groups who are more affected by seasons as they were found to be absent during Stage 2 and Stage 3 case finding.

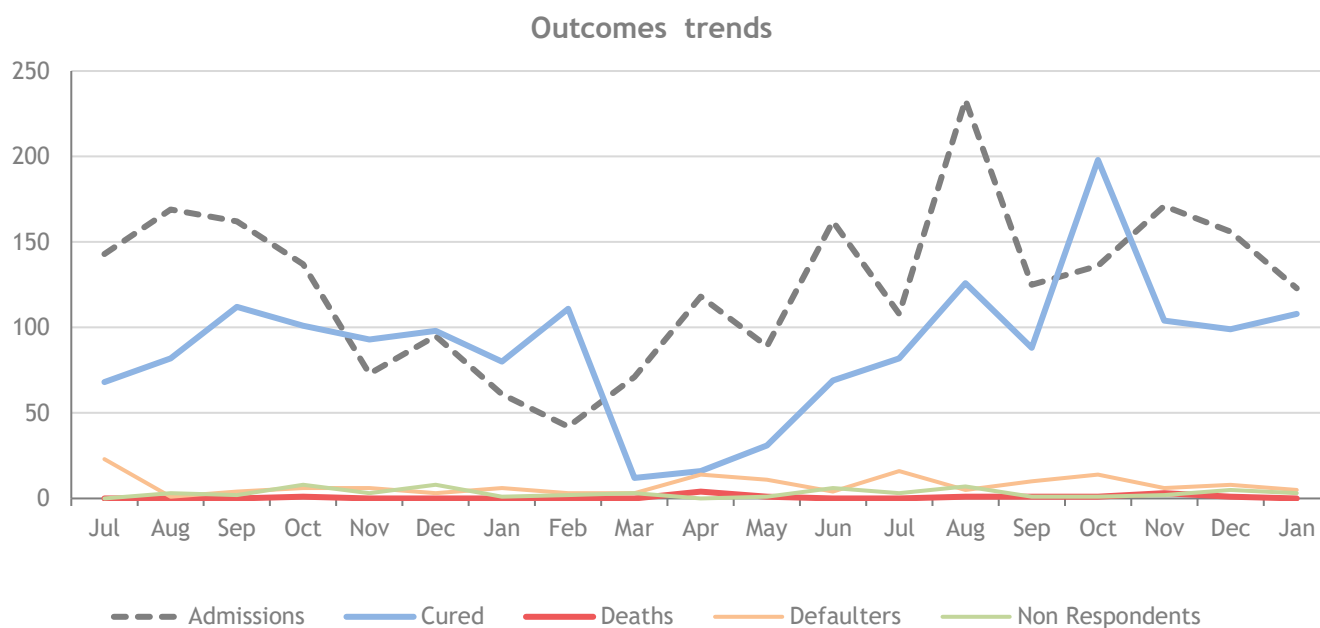


Figure 5: Outcome trends

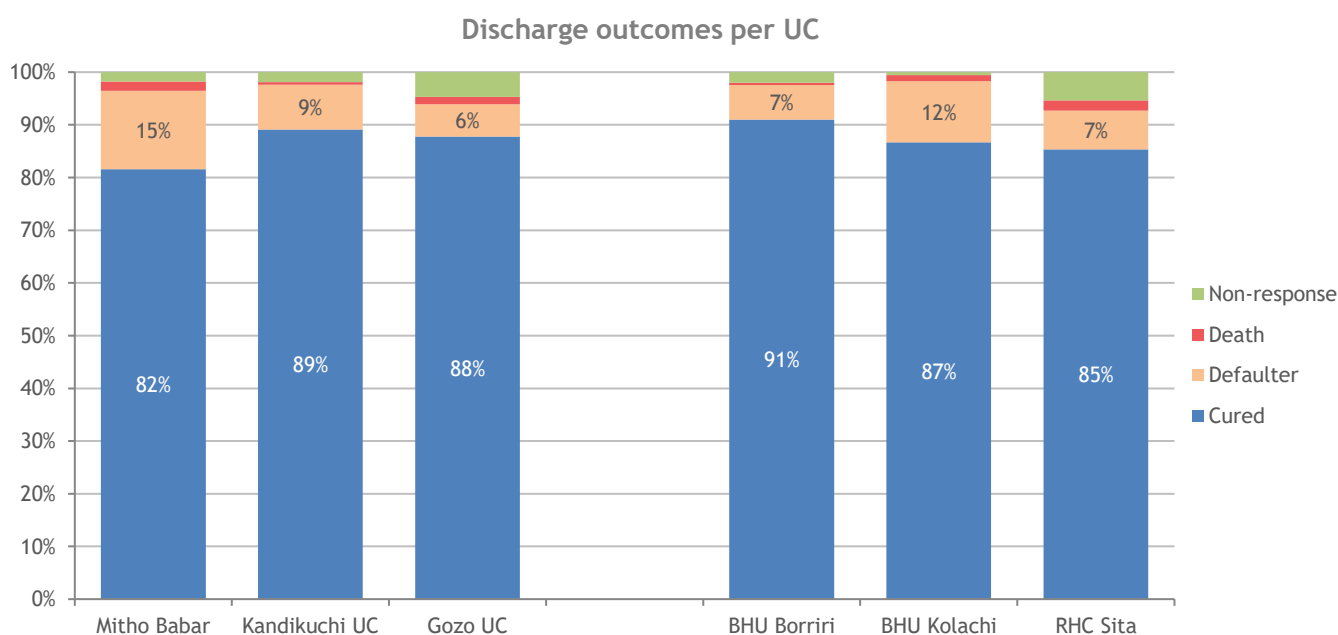


Figure 6: Outcomes by UC

Data on defaulting shows little difference in default rate between intervention (10%) and control (9%), and little variation over time. Cure rates are also similar between intervention (87%) and control (88%). This shows us that programme effectiveness is slightly worse in the intervention arm, but the difference between the two research arms in terms of coverage is likely heavily linked to how well the two systems (village level by LHW compared to union council level by OTP site) go about screening and admitting cases to the programme.



MUAC on admission:

The MUAC on admission data might indicate that cases are found earlier in the intervention group, as the median MUAC at admissions is higher than the control group (112mm compared to 110mm). However, this may also be due to incorrect MUAC measurement; Stage 1 qualitative investigation found that incorrect measurement of MUAC was a significant barrier, and the high proportion recorded as 114mm could indicate that LHWs are incorrectly recording MUAC on admission. Further study on the quality of care administered by the LHWs will shed more light on the validity of the difference in MUAC measurement.⁶

Aside from the median MUAC on admission, we can see a similar pattern of dispersion across measurements in both groups, with most admissions grouped close to the admission criteria between 114 and 110, and a long tail of low admission MUACs across the remaining points. Both research arms recorded many critically low admission MUACs (below 95mm). While cases are more likely to be identified early, indicative of a high

coverage programme, the substantial tail of low admission MUACs shows that there are significant barriers to timely admission in both research arms.

Unfortunately referral data was not available. An analysis of the proportion of cases requiring referral for complications and inpatient treatment would be useful. As this is an established CMAM programme this should not exceed 5%.

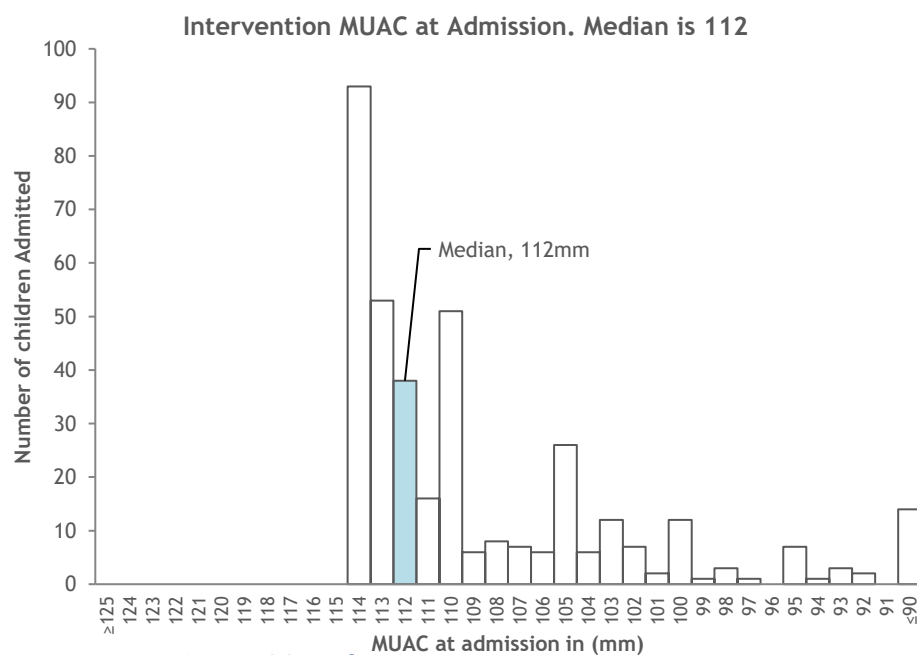


Figure 7: Intervention, MUAC on admission

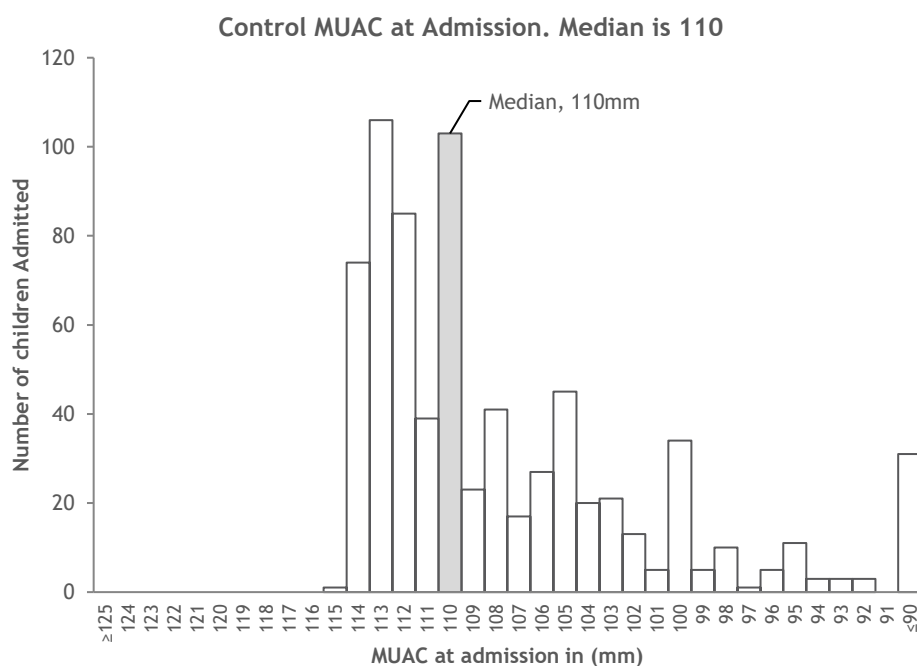


Figure 8: Control, MUAC on admission

⁶ See forthcoming ACF publication on Quality of Care study



Distance from treatment centre:

Distance from treatment centre (OTP site) applies only to the control group, as the treatment centre in the intervention group is at village level at the LHW's Health House; the national programme aims for each LHW to serve 200 households / 1000 people at the village level.

Data was taken from admission cards and tallied to find the distances travelled to OTP sites in the control group by caregivers. We can see the median distance is 2km, a reasonable walking distance, however it should be noted that midday temperatures in Dadu can reach 50° Celsius and above in Spring and Summer.

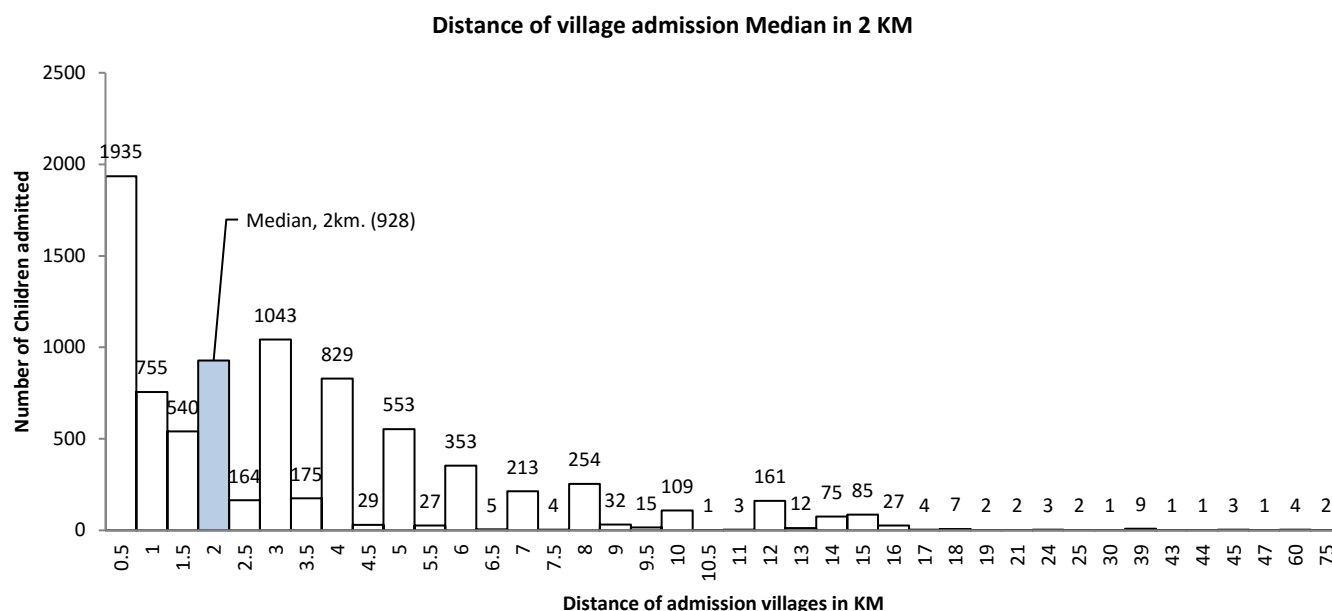


Figure 9: Distance of village admission

Length of Stay:

The length of stay is an indicator of programme effectiveness, as an effective treatment should lead to a cured discharge at around 6 weeks. As we can see from the chart, Length of stay in the control arm is much longer than this, with 2 cases below 7 weeks (4 and 5 weeks) and none at 6 weeks. 216 cases stayed in the programme for 9 weeks, the Median length of stay. The second most frequently occurring length of stay was 10 weeks, with the histogram showing a long tail up to 18 weeks (3 cases). One enumerator reported a case of a child in Gozo (Intervention arm) staying in the programme for 6 months.

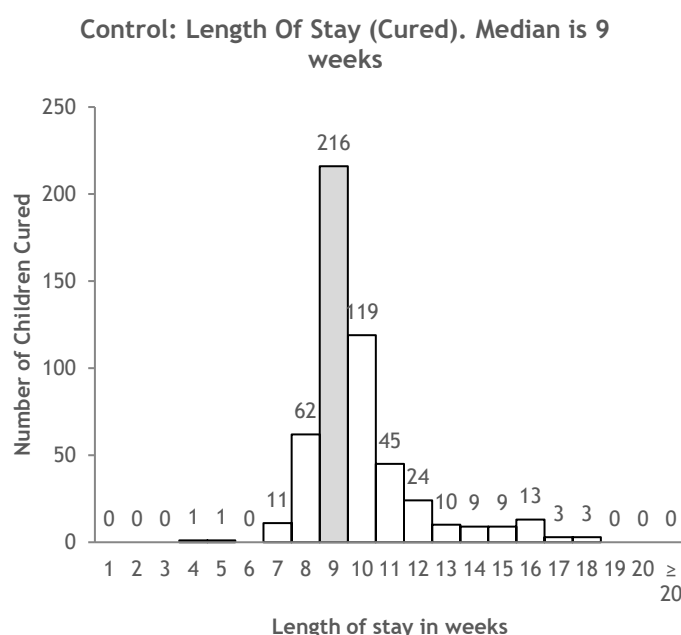


Figure 10: Length of Stay (Cured)

One reason for this could be inconsistent or unsustained treatment, as cases skip a treatment day at the OTP site, or stock outs cause breaks in treatment. Another reason is the perception in the communities of RUTF as 'chocolate', and the sharing of RUTF between family members or other community members (this was directly observed during the wide area survey), leading to the child not eating the full ration. Another is that



the LHW is reticent to discharge cases due to community peer pressure. Unfortunately length of stay data for the intervention arm was unavailable.

Qualitative data collection and analysis:

Stage 1 Qualitative research used a purposive sampling strategy, aiming for a spatial representation of the six Union Councils, selecting villages based on the distance recorded on admission tally sheets. Two days were spent training the team on SAM, CMAM and qualitative research methods. Many of the enumerators had worked for ACF in the past. A total of 84 interviews in 30 villages across the six union councils were conducted, representing a good mix of source (sex, community position and ethnicity) and method of qualitative research (Key Informant Interview, Semi Structured Interview, Focus Group Discussion, Informal Chat and Direct Observation).



Awareness

Awareness of ACF's activities, CMAM and SAM was found in much of the research. ACF has been actively sensitising the communities in the study area for many years now. The outreach activities have had a noticeable effect on awareness of SAM ('kangi'), the CMAM programme, the importance of nutrition and treating SAM as a medical condition. This was observed in discussions with many community members, including important figures such as teachers and traditional birth attendants. Lack of awareness of these key concepts was found in fewer discussions overall (45 compared to 26), but a similar amount to showing awareness in the intervention arm (20 compared to 19). In cases where 'acceptance' of the programme was highlighted, this was the way in which awareness also showed itself and is therefore useful to include here.

It should be noted that 'key persons' not being aware refers to those people who are integral to increasing demand for treatment services and creating an enabling environment such as community leaders and caregivers, traditional birth attendants and teachers compared with community members more generally.

Arm	Topic	Frequency of discussions confirming topic
Intervention	Acceptance of CMAM programme	4
	Awareness of CMAM programme	10
	Awareness of SAM	6
Control	Acceptance of CMAM programme	12
	Awareness of CMAM programme	5
	Awareness of SAM	8
Positives total		45
Intervention	Key persons not aware of CMAM programme	5
	Lack of awareness of CMAM programme	6
	Lack of awareness of SAM	6
	Misperception of SAM	2
Control	Lack of awareness of CMAM programme	4
	Lack of awareness of SAM	3
Negatives total		26

Table 1: Awareness related topics by frequency



Outreach

Awareness is of course linked closely with outreach activities and the sensitisation of the community on SAM and CMAM. We found that discussion participants were just as likely to mention regular and effective outreach activities as they were to talk about a lack of outreach, and when we break this down by research arm and topic we can see that the LHW emerges as a key aspect of the CMAM programme. From the table below we can see that in the intervention arm discussion participants more frequently mentioned poor outreach

Arm	Topic	Frequency of discussions confirming topic
Intervention	Active mobilisation by LHW	2
	Regular sensitisation in community	2
	Strong outreach by LHW	3
Control	Active mobilisation by LHW	2
	Active CNV	1
	Regular Community Outreach	3
Positives total		13
Intervention	Sensitisation only for beneficiaries, not community	1
	Poor outreach by LHW	7
Control	Lack of sensitisation on hygiene	2
	Poor Outreach	2
	Poor Screening	2
Negatives total		14

Table 2: Outreach related topics by frequency

by the LHW than strong outreach, however when aggregated with ‘active mobilisation by LHW’ and other topics the positives and negatives are similar (7 positive and 8 negative). Similarly in the control arm the research found similar frequency of negative and positive discussions around sensitisation and outreach. It became clear that outreach was either a significant booster or barrier to access, and that the LHW could make the difference.

LHWs

The research found that perceptions of CMAM, awareness of SAM, and the effectiveness of the programme, particularly with screening, follow ups and referrals, was good in some villages; often these discussions would mention that the LHW concerned was very active and sensitised the community often. In some other villages the opposite was found; in cases where the mother had a bad experience, the child was rejected, or there was a lack of awareness of CMAM and SAM, it was found the LHW was perceived to be inactive in her duties, or unmotivated, or lacking technical knowledge of CMAM.

This led to the creation of the concept of contrasting ‘motivated’ and ‘unmotivated’ LHWs, where unmotivated is characterised by a lack of enthusiasm to including treatment of malnutrition as part of her duties, expressed either in the quality of service provided whether that was the failure to carry out regular sensitisation, or more direct

Case from Kandichuci (Intervention arm):

“Interview of beneficiary, she knew about CMAM (Kangi) program but other women in the community were unaware of CMAM program and no one sensitized them.”

Case from Mitho Babar (Intervention arm):

Conducted LHW interview and she told that she got equipment from ACF, she sensitize community. Her room was good enough. While on the other hand care takers from community said that they were not sensitized by LHW, even they have to visit by their own to LHW for treatment of their children, and also caretaker mothers told that they’ve noticed the sale of RUTF there.



expressions such as telling the enumerator that they were demanding a salary increase / further incentives to include additional duties. As we can see from table 3, many different topics relating to how active and motivated the LHW is were found in the intervention arm. With their extra responsibility in the intervention arm the motivation of the LHW can be a significant barrier or booster: a champion of or bottleneck to effective treatment.

Arm	Topic	Frequency of discussions confirming topic
Intervention	Active mobilisation by LHW	2
	Positive attitude to LHW	2
	Regular sensitisation in community	2
	Strong coordination with beneficiaries	1
	Strong outreach by LHW	3
Control	Active mobilisation by LHW	2
	Regular community outreach	3
Positives total		15
Intervention	Health House: not enough space	2
	Health House: necessary documents unavailable	1
	LHW demanded salary to participate in extra duties	2
	LHW unaware of programme	1
	Long waiting time for consultation	1
	Quality of Care: exit voucher	1
	Sensitisation only for beneficiaries, not community	1
	Poor follow ups	3
	LHW has poor knowledge	1
	Poor outreach by LHW	7
Control	Negative perception of LHW	2
	Poor Outreach	2
	Poor Screening	2
	Absence of LHW	2
	Lack of interest by LHW in her activities	2
	Poor interaction with the mother	1
Negatives total		31

Table 3: Lady Health Worker related topics by frequency

The success of integrated community case management depends largely on the motivation of the LHW to deliver most aspects of the programme, from screening to referrals and keeping a well maintained Health House with enough stocks including RUTF.

RUTF:

There is a common perception of RUTF as chocolate in Dadu; enumerators often found it necessary to confirm that they were talking about, ‘the chocolate,’ when asking community members about Plumpy Nut. There was direct observation of community members eating RUTF and six other discussions that confirmed other people were eating RUTF. Selling of RUTF was found in Mitho Babar (Intervention arm). Sharing rations within the family came up during discussions. However enumerators also observed in some discussions that mothers had good knowledge of RUTF as a medicine.



Lack of coordination between key persons:

It was observed that there was often miscommunication or absence of communication between key persons on the supply side of the CMAM programme. Not necessarily a problem in itself, but barriers such as lack of awareness, RUTF stock breaks or unsuccessful referrals were linked to this lack of coordination. This finding is characterised by qualitative interviews identifying a breakdown in communication between the OTP site and the LHWs, or between ACF and specific MoH personnel.

Community stakeholders (imam, teachers and other community leaders) were often unaware of the programme; one enumerator observed that they had, “conducted teachers’ interview, they were unaware of CMAM, and the reason was lack of coordination with LHW...”

This lack of coordination strongly affects a key component of iCCM of malnutrition: referrals of complicated cases. In one case, a too early referral by the LHW was rejected at the Health Centre, which led to a negative perception of the LHW. The child was later admitted to the Health Centre, but negative perception of the LHW led to her stopping her activities. Other cases included a child being admitted into the OTP site programme while remaining in the LHW programme, thereby receiving double rations.

Traditional Magic / Myths

Forms of traditional magic included leaving a SAM child in a green field during the day, or underneath a particular tree. Another was the myth that if a pregnant woman walks beside a dead body her child will become malnourished. Traditional healers showed varying degrees of awareness and acceptance of the CMAM programme, and some are involved in screening for cases.

Stigma

Though this was found to be an issue in the past, and again was found by the qualitative research, it did not figure prominently in the findings, and sensitisation efforts seem to have had the effect of combating stigma.

These were the main themes emerging from Stage 1 qualitative research. As we moved into the final two days of initial research we amended the standard questionnaire to seek to confirm topics which had been discussed once but not otherwise corroborated, for example the traditional magic, after which we consolidated topics into barriers and boosters, such as the barrier, ‘[poor] Quality of Care by LHW,’ which covers many examples. The full table of the consolidated barriers and boosters, with the source and method, is presented on the following pages.

Case from Kolachi (Control arm):

A SAM child was treated by ACF OTP staff and child was cured, mother of the child was very satisfied and was satisfied with the behaviour of ACF staff and told that they were polite and were taking care while on visits. Later on after her child was cured she noticed another weak child and referred that child to HC for treatment.



Consolidated Barriers and Boosters

Intervention

Booster	Source (Method)	Method
Awareness of SAM	BF, CB, CM, CW	FGD, KI, SSI
Acceptance of CMAM programme	BF, CL, CM, CW	SSI, KI, IC, FGD
Awareness of CMAM programme	BF, CL, CM, CW,	FGD, KI, SSI
Easy access to Health House	BF, LHW, TBA	IC, KI, SSI
Active mobilisation by LHW	CW, TC	KI
Positive attitude to LHW	CNV, LHW	KI
Strong outreach by LHW	CW, LHW	FGD, KI, SSI
Regular sensitisation of community	CM, LHW	KI
Good IYCF practices	BF, CW	FGD, KI, SSI

Barrier	Source	Method
Lack of coordination between Health Personnel	BF, LHW, TBA	KI, SSI
Quality of Care by LHW	CBO, CL, CM, CW, LHV, LHW, MO, TBA	FGD, IC, KI, SSI
Lack of Awareness of SAM	BF, CL, CM, LHW, TC	KI, SSI
Unawareness of CMAM programme	BF, CM, CW, LHW, TC	FGD, SSI
Key persons not aware of program	CL, CM, TBA, TC	KI, SSI
Poor Outreach by LHW	CBO, CL, CM, CW, LHV, LHW	FGD, IC, KI, SSI
Medicine Stock out	BF, CM, EM, LHW,	DO, FGD, KI, SSI
Other family members eat the RUTF	BF, CNV, LHW	FGD, KI, SSI
Distance to Health House	CL, PLW	FGD, SSI
Poor knowledge of IYCF	BF, CW	FGD, KI, SSI
Treatment through traditional magic	BF, CNV	KI, SSI
Stigma	BF, CL	FGD, KI
LHW demanding salary	LHW	IC, KI
Not enough storage space in the Health House	LHW	KI
Incentive attraction of treatment	LHW	KI

BF	Beneficiary (mother / caregiver)	CS	Case Study
CBO	Community Based Organisation	DO	Direct Observation
CL	Community Leader	FGD	Focus Group Discussion
CM	Community members: Men	IC	Informal Chat
CNV	Community Nutrition Volunteer	KI	Key Informant Interview
CV	Community Volunteer	SSI	Semi Structured Interview
CW	Community members: Women		
EM	Enumerator (direct observation)		
IM	Imam		
MO	Medical Officer		
TBA	Traditional Birth Attendant		
TC	Teacher		
TH	Traditional Healer		



Control

Booster	Source	Method
Awareness about Malnutrition	CV, CW, TBA, TH	FGD, KI, SSI
Acceptance of CMAM programme	CBO, CL, CM, CW, IM, TBA, TH	FGD, KI
Referral Mechanism	CV, LHW, TBA	KI, SSI
Regular community outreach	CM	KI, SSI
Awareness of CMAM programme	CBO, CL, CW, LHW	FGD, KI, SSI
Motivated volunteers	BF, CV	KI
Good perception of health staff	BF, CM, LHW	FGD, SSI
Peer referral	BF, CM, LHW	FGD, SSI
Active mobilisation by LHW	LHW, TBA	KI
Patient likes the taste of RUTF	CM, CNV	KI, SSI

Barrier	Source	Method
Poor outreach	CM, CNV	KI
Lack of awareness of CMAM	CM, IM, TBA, TC	KI
Distance, lack of transport expenses	CM, CW	KI
Lack of awareness of SAM	CM, TC	KI
Lack of coordination in CMAM	CL, TBA, TC	KI
Poor screening, incorrectly measuring MUAC	CBO, LHW	CS, KI
Negative perception of LHW, TBA	LHW, TBA	CS, SSI
Common perception that RUTF is 'chocolate'	CM, CW	FGD, KI
Lack of sensitisation on hygiene	CM, IM	IC, KI
Treatment through traditional magic	CL, TBA	KI
Stigma	CL, CM	KI
Absence of LHW	CM, EM	DO, SSI
LHW lack of interest in her activities	CM	IC, SSI

BF	Beneficiary (mother / caregiver)
CBO	Community Based Organisation
CL	Community Leader
CM	Community members: Men
CNV	Community Nutrition Volunteer
CV	Community Volunteer
CW	Community members: Women
EM	Enumerator (direct observation)
IM	Imam
MO	Medical Officer
TBA	Traditional Birth Attendant
TC	Teacher
TH	Traditional Healer

CS	Case Study
DO	Direct Observation
FGD	Focus Group Discussion
IC	Informal Chat
KI	Key Informant Interview
SSI	Semi Structured Interview



STAGE 2

After Stage 1 the survey team spent a day reviewing the findings and discussing the links between barriers and boosters using the larger mind map and producing smaller concept maps. Short presentations of conclusions were made that the team would question and discuss points before reaching a consensus. This exercise served to consolidate the progress of our investigation, to ensure we agreed as a team what the findings of Stage 1 were, in order to move into the small area surveys with clear set hypotheses.



Small Area Surveys

Several hypotheses were pitched, including one relating to acceptance of CMAM by the community imam (which was eventually rejected), before settling on one hypothesis per research arm (see table below). This means that Stage 2 consisted of two small area surveys stratified by village. The team went out to the identified villages to screen for SAM cases and then find out if these children were in the CMAM programme (either delivered at the OTP site or by the LHW). SAM cases were defined as a child with MUAC less than 115mm. Recovering cases were defined as cases that were no longer SAM but have yet to meet the discharge criteria (>125mm MUAC for 2 weeks).

Arm	Hypothesis	Village selection (purposive sampling)
Intervention	In villages with good quality LHWs, we will find high coverage. In villages with poor quality LHWs, we will find low coverage.	2 villages with a poorly motivated LHW were selected and two villages with a well-motivated LHW were selected (as identified by the C Project manager).
Control	In villages far from the OTP site we will find low coverage. In villages close to the OTP site we will find high coverage.	2 villages close to the OTP and two villages far from the OTP were selected based on admission distances on tally sheets from Stage 1.

The teams completed the screening in one day and the results follow. For our analysis we need to use Lot Quality Assurance Sampling (LQAS) to confirm or deny the hypotheses, using 50% coverage (Sphere Standard for a rural area) as a demarcation between 'high' and 'low' coverage, so our decision rule (d) is half of the cases found (In, Out, Recovering in and Recovering out), rounded down (5.5 becomes 5).

Intervention

Motivated LHWs we will find high coverage, unmotivated low coverage - **Hypothesis denied**

	SAM in	SAM out	REC in	REC out (estimated)		Conclusion
<i>Motivated</i>						
Ibrahim Chandio	1	0	9	0	n = 17	Decision rule is met therefore coverage classified as being above the standard
Baid	1	1	5	0	d = 8	
					covered cases 16	
					Meets d? Yes	
<i>Unmotivated</i>						
Khanpr	1	1	0	0	n = 4	Decision rule is met therefore coverage classified as being above the standard
Kushalangi	0	0	2	0	d = 2	
					covered cases 3	
					Meets d? Yes	

Control

Far from OTP we will find low coverage, close to OTP we will find high coverage - **Hypothesis confirmed**

	SAM in	SAM out	REC in	REC out (estimated)		Conclusion
<i>Close</i>						
Borriri	2	0	2	0	n = 7	Decision rule is met therefore coverage classified as being above the standard
Kolachi	0	0	3	0	d = 3	
					covered cases 7	
					Meets d? Yes	
<i>Far</i>						
Allah Dito Khoso	1	1	0	0	n = 4	Decision rule not met therefore coverage classified as being below the standard
Paibal Chandio	0	1	1	0	d = 2	
					covered cases 2	
					Meets d? No	



Our hypothesis in the intervention arm, that we would find low coverage in villages with unmotivated LHWs, did not hold up. There may be a few reasons for this. One is that the purposive sampling of LHWs who were ‘unmotivated’ was unclear, so the catchment area selected was not relevant to the hypothesis, or that houses falling outside the catchment area of the particular LHW were screened. It was found that active and adaptive case finding was not appropriate in many village settings in Dadu as will be explored further in Stage 3, meaning that uncovered cases might have gone unscreened by the small area survey.

Second, it is also clear that large number of recovering cases sway the results. We have observed in Stage 1 a higher MUAC on admission in the intervention arm, so it is possible that MUAC being incorrectly recorded by the LHW led to an admission that was later found by the team to be ‘recovering’ but was in fact never a true SAM case in the first place. We can see the Median Length of stay is 9 weeks, a long time (more than 2 months) to be in the program. It is worth noting that if we analyse only the SAM in and SAM out cases found (point coverage), both hypotheses are confirmed.

Point

Intervention

Motivated LHW	Conclusion	Unmotivated LHW	Conclusion
n = 3	Decision rule is met	n = 2	
d = 1	therefore coverage	d = 1	Decision rule not met
covered cases 2	classified as being above	covered cases 1	therefore coverage classified
Meets d? Yes	the standard	Meets d? No	as being below the standard
Hypothesis: Confirmed			

Control

Close to OTP	Conclusion	Far from OTP	Conclusion
n = 2	Decision rule is met	n = 3	
d = 1	therefore coverage	d = 1	Decision rule not met
covered cases 2	classified as being above	covered cases 1	therefore coverage classified
Meets d? Yes	the standard	Meets d? No	as being below the standard
Hypothesis: Confirmed			

d = decision rule **n** = number of cases found

Third, selection of the villages for the small area study may have been an issue. We asked the C Project manager to highlight two villages with ‘unmotivated’ LHWs, characterised by lack of proactive engagement in the community in terms of outreach and screening. A standardised system of defining LHWs as unmotivated or not was not used, but may have been useful in our selection of villages.

Our Stage 1 research led us to believe the quality of care provided by the LHWs has an effect on coverage. As our small area survey denied this hypothesis we must conduct further research on this barrier. A Quality of Care study conducted in June will help to shed more light on the topic, including correct / incorrect MUAC measurement.

Our hypothesis for the Control arm, that in villages far from the OTP site we will find low coverage, and in those close to the OTP site we will find high coverage, was confirmed by the small area survey. This corroborates our qualitative finding that distance from the OTP site is a significant barrier. One of the main aims of the C Project is to tackle this barrier by decentralizing SAM treatment from the OTP site to the LHWs.



Forming the prior:

The Bayes method requires us to form a prior estimation of coverage (prior to a wide area survey that will corroborate or conflict with this estimation). We use several methods to estimate coverage and then take the average of these, using a previous SQUEAC, a group histogram, simple scoring the Barriers and Boosters from Stage 1, and a weighted scoring of the same.

Weighted barriers & boosters:

We weighted the barriers and boosters by their effect on coverage and access. Where there was disagreement, arguments using the collated supporting evidence of Stage 1 were made until consensus could be reached. This was made easier by posting our findings, including charts of routine data, up onto The SQUEAC Wall (see Annex 6) around the central Mind Map, to make it easier to link sources whilst presenting arguments to the group. The weighted BBQ follows:

Intervention

Intervention - Boosters				
Booster	Source (Method)	Method	Weight	Simple
Awareness of SAM	BF, CB, CM, CW	FGD, KI, SSI	4.25	5
Acceptance of CMAM programme	BF, CL, CM, CW	SSI, KI, IC, FGD	4	5
Awareness of CMAM programme	BF,CL,CM,CW,	FGD,KI,SSI	4	5
Easy access to Health House	BF, LHW, TBA	IC,KI,SSI	4	5
Active mobilisation by LHW	CW, TC	KI	4	5
Positive attitude to LHW	CNV, LHW	KI	3.75	5
Strong outreach by LHW	CW, LHW	FGD, KI, SSI	3	5
Regular sensitisation of community	CM, LHW	KI	2.5	5
Good IYCF practices	BF, CW	FGD, KI, SSI	2.5	5
			32	45

Intervention - Barriers				
Barrier	Source	Method	Weight	Simple
Lack of coordination between Health Personnel	BF, LHW, TBA	KI, SSI	5	5
Quality of Care by LHW	CBO, CL, CM, CW, LHV, LHW, MO, TBA	FGD, IC, KI, SSI	4.75	5
Lack of Awareness of SAM	BF, CL, CM, LHW, TC	KI, SSI	4.75	5
Unawareness of CMAM programme	BF, CM, CW, LHW, TC	FGD, SSI	4	5
Key persons not aware of program	CL, CM, TBA, TC	KI, SSI	4	5
Poor Outreach by LHW	CBO, CL, CM, CW, LHV, LHW	FGD, IC, KI, SSI	4	5
Medicine Stock out	BF, CM, EM, LHW,	DO, FGD, KI, SSI	2.75	5
Other family members eat the RUTF	BF, CNV, LHW	FGD, KI, SSI	2.25	5
Distance to Health House	CL, PLW	FGD, SSI	2	5
Poor knowledge of IYCF	BF, CW	FGD, KI, SSI	2	5
Treatment through traditional magic	BF, CNV	KI, SSI	1.5	5
Stigma	BF, CL	FGD, KI	1	5
LHW demanding salary	LHW	IC, KI	1	5
Not enough storage space in the Health House	LHW	KI	0.5	5
Incentive attraction of treatment	LHW	KI	0.5	5
			40	75



Control

Control - Boosters				
Booster	Source	Method	Weight	Simple
Awareness about Malnutrition	CV, CW, TBA, TH	FGD, KI, SSI	4.25	5
Acceptance of CMAM programme	CBO, CL, CM, CW, IM, TBA, TH	FGD, KI	4.25	5
Referral Mechanism	CV, LHW, TBA	KI, SSI	4	5
Regular community outreach	CM	KI, SSI	4	5
Awareness of CMAM programme	CBO, CL, CW, LHW	FGD, KI, SSI	3.75	5
Motivated volunteers	BF, CV	KI	3	5
Good perception of health staff	BF, CM, LHW	FGD, SSI	3	5
Peer referral	BF, CM, LHW	FGD, SSI	2.75	5
Active mobilisation by LHW	LHW, TBA	KI	1	5
Patient likes the taste of RUTF	CM, CNV	KI, SSI	1	5
			31	50

Control - Barriers				
Barrier	Source	Method	Weight	Simple
Poor outreach	CM, CNV	KI	5	5
Lack of awareness of CMAM	CM, IM, TBA, TC	KI	4.75	5
Distance, lack of transport expenses	CM, CW	KI	4	5
Lack of awareness of SAM	CM, TC	KI	3.75	5
Lack of coordination in CMAM	CL, TBA, TC	KI	3	5
Poor screening, incorrectly measuring MUAC	CBO, LHW	CS, KI	3	5
Negative perception of LHW, TBA	LHW, TBA	CS, SSI	2	5
Common perception that RUTF is 'chocolate'	CM, CW	FGD, KI	1.5	5
Lack of sensitisation on hygiene	CM, IM	IC, KI	1	5
Treatment through traditional magic	CL, TBA	KI	1	5
Stigma	CL, CM	KI	1	5
Absence of LHW	CM, EM	DO, SSI	0.5	5
LHW lack of interest in her activities	CM	IC, SSI	0.5	5
			31	65

This gives us prior mode estimations as follows:

Intervention		Control	
Simple			
Boosters simple	Barriers simple	Boosters simple	Barriers simple
sum: 45	sum: 75	sum: 50	sum: 65
0 + 45 = 45	100 - 75 = 25	0 + 50 = 50	100 - 65 = 35
45 + 25 = 70		50 + 35 = 85	
70 / 2 = 35	simple estimation: 35%	85 / 2 = 43	simple estimation: 43%
Weighted			
Boosters weighted	Barriers weighted	Boosters weighted	Barriers weighted
sum: 32	sum: 40	sum: 31	sum: 31
0 + 32 = 32	100 - 40 = 60	0 + 32 = 31	100 - 31 = 69
32 + 60 = 92		31 + 69 = 100	
92 / 2 = 46		100 / 2 = 50	
weighted estimation: 46%		weighted estimation: 50%	



Histogram:

The next method of estimated coverage is using a manually drawn histogram with group consensus around how likely coverage is to be within each 10 percentile group. This method gave us the following curve parameters:

Intervention histogram: mode: 45%, max: 70%, min: 20%

Control histogram: mode: 51%, max: 75%, min: 30%

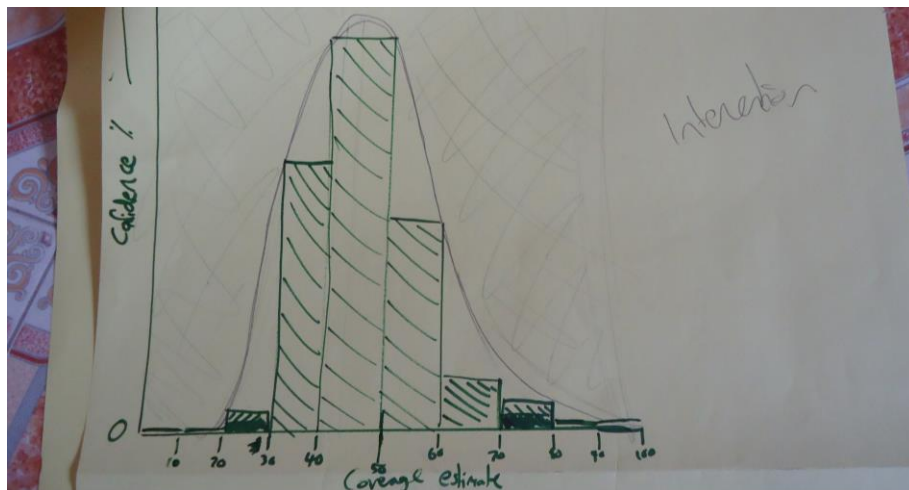


Figure 11: Intervention prior histogram

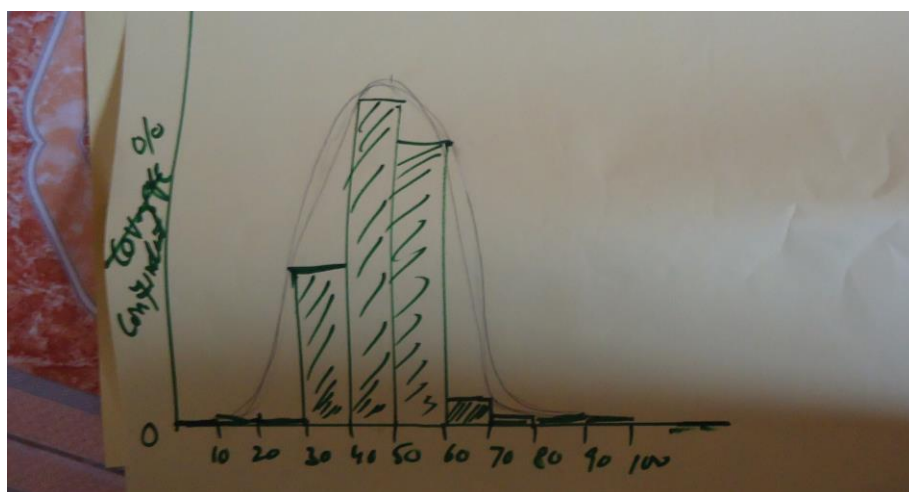


Figure 12: Control prior histogram

Previous SQUEAC:

In addition we used the findings of the previous SQUEAC conducted in April 2015, which published the following coverage estimates:

Intervention: 41%, **Control:** 44%

Prior Mode:

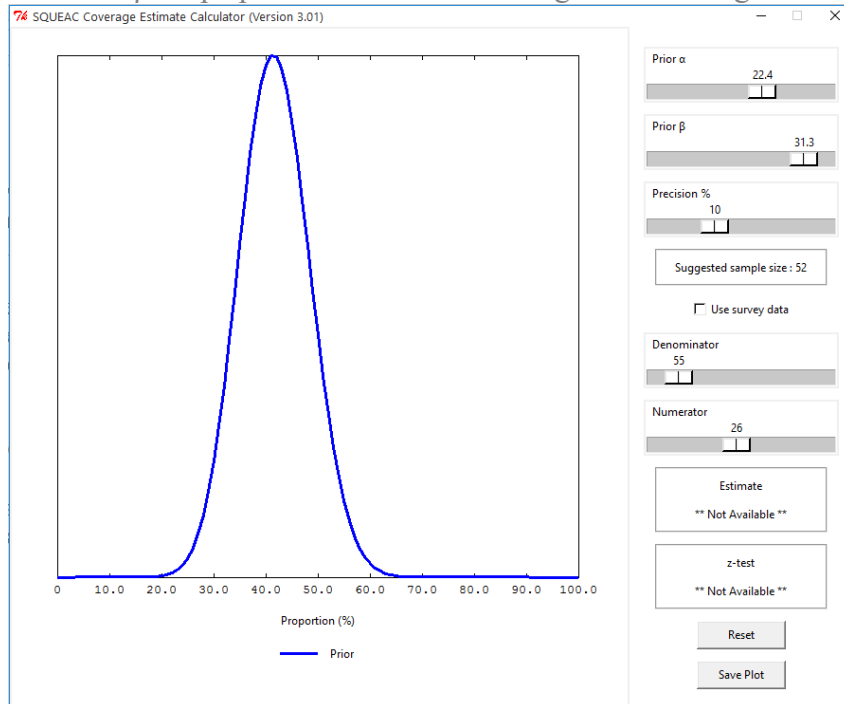
Bringing these together gave us the following prior mode:

	Weighted	Simple	SQUEAC 2015	Histogram	2016 Prior Mode
Intervention	46%	35%	41%	45%	41.65%
Control	50%	43%	44%	51%	46.85%



Bayes Prior Plot:

With the prior mode as well as the maximum and minimum parameters of the histograms we can then calculate the α and β shape parameters in Excel using the following formulas:



$$\mu = \text{minimum} + 4 \times \text{mode} + \text{maximum} / 6$$

$$o = \text{maximum} - \text{minimum} / 6$$

$$\alpha_{\text{prior}} = u \times ([u \times (1 - u) / o^2] - 1)$$

$$\beta_{\text{prior}} = (1 - u) \times ([u \times (1 - u) / o^2] - 1)$$

Intervention:

$$\alpha_{\text{prior}} = 22.4$$

$$\beta_{\text{prior}} = 31.3$$

Control:

$$\alpha_{\text{prior}} = 25.8$$

$$\beta_{\text{prior}} = 29.3$$

Figure 13: Intervention prior plot

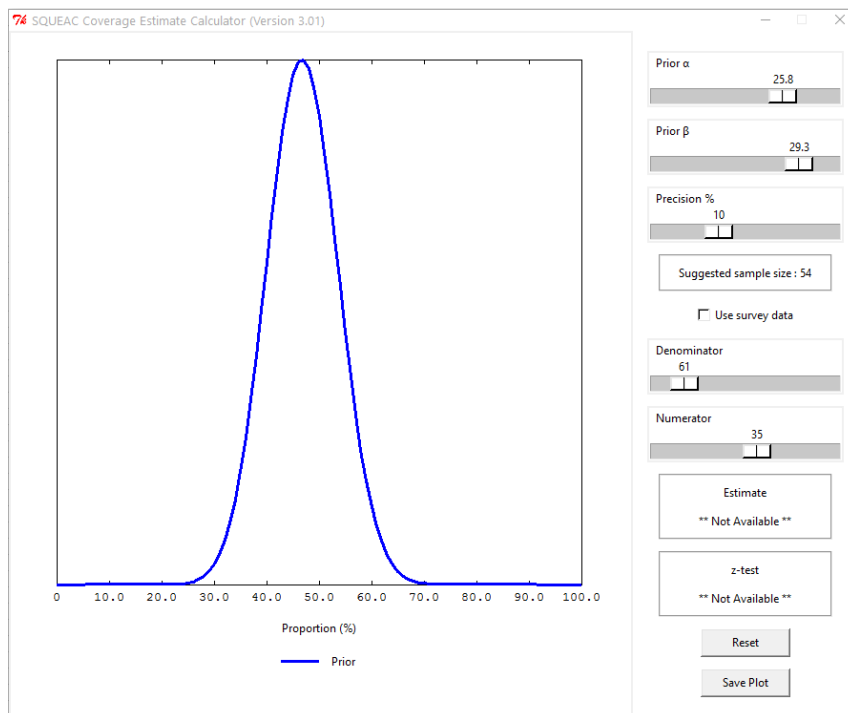


Figure 14: Control prior plot

Using the SQUEAC Coverage Estimation Calculator we produce the two prior plots, which suggest a sample size of $n=52$ for the Intervention and $n=54$ for the Control in the Wide Area Survey conducted in Stage 3.



STAGE 3

Quantitative sampling framework:

Village selection:

As Geographic Information Systems (GIS) activities are not conducted by ACF Pakistan mapping was not possible. For this reason a systematic stratified sampling (the list method) of the villages list provided by the program manager was used for the Wide Area Survey sampling. This provides us with a random and spatially representative sample as villages are listed according to catchment area. Where the sample selected a village already visited in the small area surveys, the next village on the list was used instead. This was done to avoid overestimating coverage, as those uncovered cases found in the small area survey were effectively screened by the enumerators and referred to the programme, thus skewing apparent coverage. It also gave us the opportunity to use the capacity and logistics of the survey team to screen more villages.

Sample Size & Precision:

The Bayes calculator suggests a sample size of 52 for the Intervention arm and 54 for the Control arm to satisfy 10% precision.

Case finding methodology:

Active and Adaptive case finding was used, however this proved difficult in some settlements where every house faces inward to a common area making up a walled compound inaccessible to male enumerators. In these cases the female enumerators would enter and essentially screen all the children aged 6-59 months, and then administer the questionnaire in the case of uncovered SAM cases. These village visits were facilitated by a key informant who was usually a teenage male from the village or the LHW herself. This is a diversion from the strictest interpretation of the active and adaptive case finding method, however as the female enumerator went to the houses themselves, guided by a key informant, it is a method more likely to find uncovered cases than gathering at the mosque. In larger, more open villages, teams were able to move from one case to another by using drawings of SAM children provided by the CMAM programme, and by asking mothers where there were children in a similar condition in the village.



Wide Area Survey results:

Intervention		Control	
IN	16	IN	21
OUT	25	OUT	22
REC IN	10	REC IN	14
REC OUT	4	REC OUT	4

Reasons for Non attendance

During the Wide Area Survey, mothers of SAM children not in the program were given a questionnaire about why their child was not receiving program treatment. The reasons from each research arm are presented below.

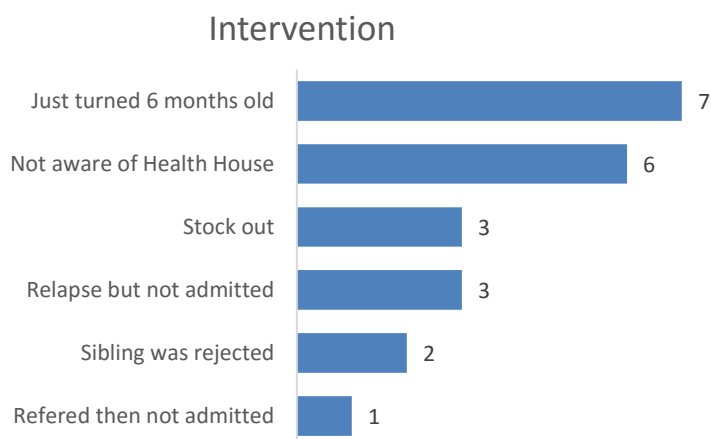


Figure 15: Reasons for non-covered SAM cases found during the Wide Area Survey - Intervention

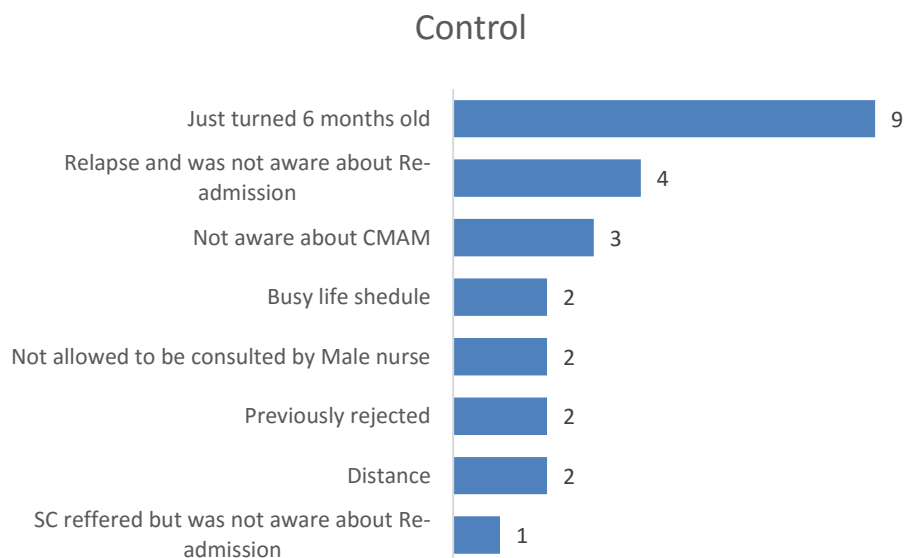


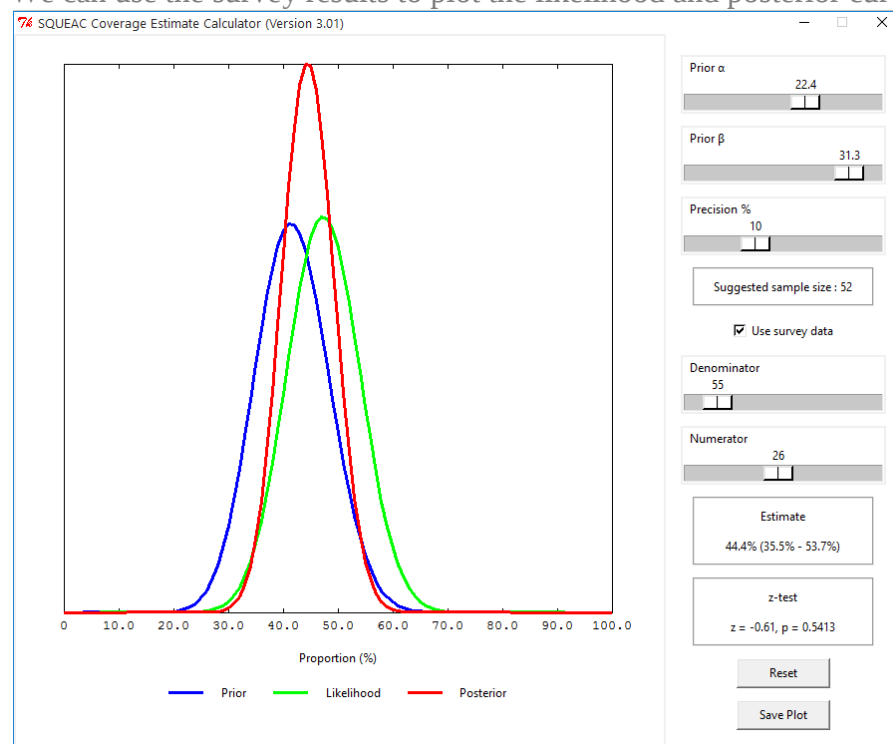
Figure 16: Reasons for non-covered SAM cases found during the Wide Area Survey - Control

The high number of incidents where the uncovered case had only just turned 6 months old highlights another key area that is negatively affected by poor coordination between health personnel. It is possible this is due to poor handover between the Infant and Young Child Feeding and CMAM staff. Please see Annex 5 for the questionnaire for uncovered SAM cases.



Bayes Coverage Estimate

We can use the survey results to plot the likelihood and posterior curves for the SQUEAC.



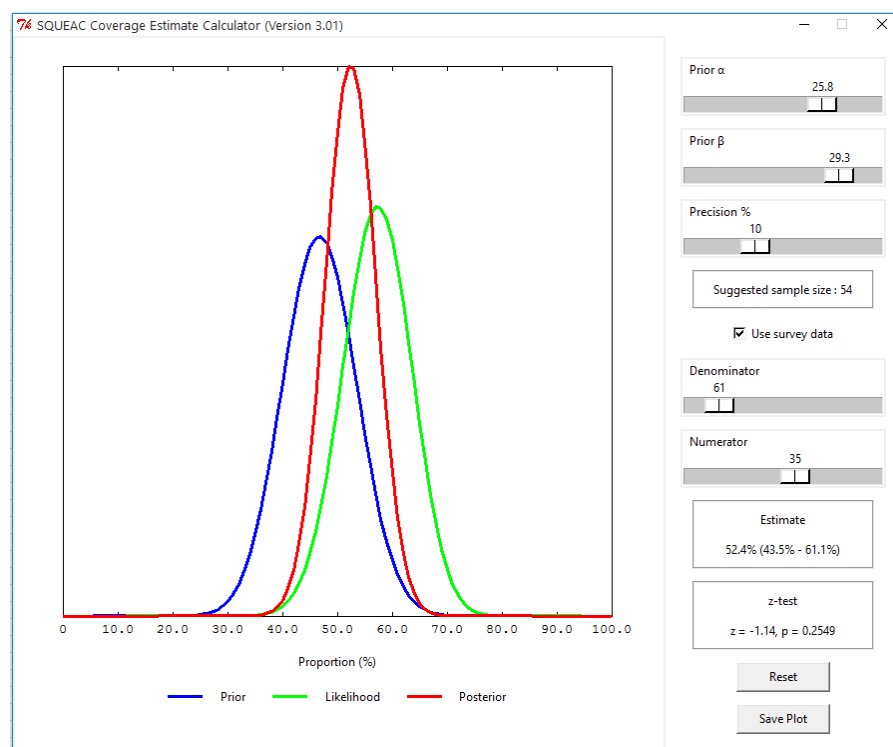
Intervention

The intervention single coverage estimate is 44.4% (CI: 35.5 – 53.7%) with 10% precision. The conjugate analysis does not show a conflict between the prior and likelihood ($p = 0.5413$), making this a strong estimation and we can accept the posterior result.

Numerator: 26
 Denominator: 55

Single coverage estimate
 44.4% (CI: 35.5 – 53.7%).

Figure 17: Intervention Posterior Plot



Control

The control single coverage estimation is 52.4% (CI: 43.5% - 61.1%) with 10% precision. Similarly to the intervention plot, the conjugate analysis does not conflict ($p = 0.2549$), making this a strong estimation that we can accept.

Numerator: 35
 Denominator: 61

Single coverage estimate
 52.4% (CI: 43.5% - 61.1%).

Figure 18: Control Posterior Plot



Conclusions

Single coverage estimate

(10% precision, 10% margin of error)		2015	2016	Union Councils
Intervention	40.6% (CI 95%: 29.9% - 52.2%)		44.4% (CI 95%: 35.5% - 53.7%)	Gozo, Mitho Babar, Kandichuki
Control	43.9 (CI 95%: 33.2% - 55.2%)		52.4% (CI 95%: 43.5% - 61.1%)	Kolachi, Kakar, Sita Road

Met Need

	Coverage	x	Cure rate	=	Met need
Intervention	44.4	x	0.86	=	38%
Control	52.4	x	0.88	=	45%

Recommendations

Intervention

The Coverage estimate of 44.4% is below the Sphere standard for a rural area of 50% and is therefore justification for improving the programme. The intervention has now ended and SAM children in the Intervention arm (Gozo, Mitho Babar and Kandichuki) are now treated at the OTP site, LHWs now refer new cases to the OTP site.

Although treatment at village level has ceased, the LHW remains a keystone of an effective CMAM programme in their role in sensitisation, screening and referrals, as well as the associated diseases that are exacerbated by malnutrition. The Quality of Care theme, as it relates to iCCM as a global model, should be the subject of additional data collection and analysis. Our stage 1 research found that the quality of service delivered by the LHWs differed greatly. Poor quality was characterised by not conducting sensitisation and screening, incorrectly referring cases, a poorly organised Health House, incorrect MUAC measurement and not adhering to the protocol. In one case an enumerator directly observed the LHW's teenage son eating RUTF from the supply box. In discussions some LHWs explained they were not going to conduct SAM treatment without additional incentive from the national program. The essence of the problem seems to be the evident lack of ownership of the integration of SAM into the LHW's duties. We know this is partly caused by a lack of incentives and an already high workload, as mentioned by LHWs during our research, though other possible factors relating to 'ownership' such as formal recognition (e.g. certificates of gratitude) have been proposed by the programme.

Another key challenge for the area is the lack of coordination between key personnel. This has many knock on effects and is a collective responsibility. An immediate action to take is joint monitoring visits between ACF and MoH personnel. A stakeholder mapping exercise combined with a supply chain (referrals, stock, and communications) mapping exercise will help to identify areas for improving coordination. This is a crucial area that deserves dedicated capacity, as it effects many other barriers including medicine stock outs, dropped referrals, poor knowledge by medical practitioners of available services, and the high number of incidents of cases being uncovered because they have just turned 6 months old.

This represents an area for improvement that will save lives, but also represents reputational and programmatic risk. Poor coordination could potentially lead to long term consequences in relation to key partnerships in and between the humanitarian, national and research sectors.



Control

The coverage estimate of 52.4% (CI: 43.5% - 61.1%) includes possible coverage rates that are below the Sphere standard, which is justification for improvements in the programme.

The main recommendation for improving outreach is that it be undertaken regularly in a planned way. The regularity will depend on the particular activity but targets can be set and adhered to. The programme should also look at including traditional healers in the process (depending on acceptance by these healers) to address lack of acceptance. This could have a positive impact on awareness and acceptance of the programme, though a specific 'awareness campaign' is a separate and distinct, high priority, recommendation. Sensitisation and awareness contribute to improved Demand and the Enabling Environment as a whole, which has positive effects for referrals.

To tackle the problem of distance, as the Health House level treatment model is not continuing at this time, several recommendations have been put forward including the use of satellite sites, identification of particularly far villages for specific support, and efforts to get communities to re priorities expenses for travel to the OTP site. For the full list of recommended actions, please see Annex 1.



ANNEXES

ANNEX 1: Action Plan (Responsible person key overleaf)

Priority	Recommendation	Responsible	Action#	Action
High	Improve Quality of Care of LHWs	ACF NutPM, C B Tm	1	Quarterly Training and Monitoring/ Supervision of LHWs
High		ACF FC	2	Incentivize treating SAM (certificates, appreciation, \$\$)
High	Awareness campaign in community	ACF NutDepPM, C B Tm	3	Awareness sessions should be arranged by the nutrition mobilizer's team with support of nutrition capacity building team
High	Introduce RUTF as medicine	OTP Nu, C B Tm	4	To prevent sharing RUTF, awareness sessions should be arranged to educate people (Inc. caregivers) about the RUTF that this is a medicine for the SAM children.
High	Strong coordination b/w Health personals	ACF NutPM, Res Man, Res DepPM, ACF NutDepPM	5	Strong coordination and communication between ACF and Health Department by which we can get good cooperation of Health Department officials and we can ensure Joint monitoring visit.
High	Improve RUTF Supply mechanism	Nut Sup, LHS	6	Use SMS alerts (LHW to OTP) to respond to stock out quickly
High	Improve referrals	OTP Nu, Nut Mob	7	Sensitisation
Medium	Improve Quality of Care of LHWs	ACF NutPM	8	BCC Campaign
Medium		PNC, LHWs MoH, LHS	9	Supervision and monitoring
Medium		PQA team, ACF UK	10	Quality of Care Study
Medium	Improve Sensitisation and Outreach	ACF NutPM, ACF Comm	11	Do community outreach 'regularly' (regularity varies per activity)
Medium	Stock storage management in HH	OTP Nu, LHWs MoH	12	Train / Sensitize LHWs on proper use of Steel Trunk (intended for storing medicine not personal items).
Medium	Improve RUTF Supply mechanism		13	Monitor resource availability
Medium		DisCoor, ACF NutPM, ACF NutDepPM	14	Integrate distributions into other ACF activities
Medium		DisCoor	15	National programme should integrate and provide 1 vehicle
Medium	Improve referrals	Nut Sup, Dis Coor Assi, LHS	16	Coordination on referral slips with national programme
Medium		Nut Sup, LHS	17	Cross check # referred (HH) and # admitted (OTP / Stabilisation Centre)
Medium		ACF NutPM, DisCoor	18	Supervision and monitoring
Medium	Tackle the problem of distance	ACF NutPM, Res Man, Dis Coor, HF	19	Help community to prioritise SAM treatment expenses
Medium			20	Satellite Sites
Medium		ACF NutPM, Res Man, Dis Coor	21	Identify specific villages that are very far that could benefit from specific ACF support
Medium			22	Work with community leaders to provide community transport for the poorest families
Medium	Traditional Healers		23	Include Traditional healers as volunteers / outreach workers
Medium		ACF NutPM, Res Man, Dis Coor	24	Traditional healers sensitise other traditional healers on CMAM
Medium			25	Last night of lunar month combining traditional and scientific methods in one meeting



Responsible:

ACF NutPM	ACF (Nutrition PM)
C B Tm	Capacity Building team
ACF NutDepPM	Nutrition Deputy Program Manager
OTP Nu	OTP Nurse
Nut Mob	Nutrition Mobilisers
Res Man	Research Manager
Res DepPM	Research Deputy Manager
DisCoor	District Coordinator, National program
Nut Sup	Nutrition Supervisor, National Program
LHS	Lady Health Supervisor
ACF FC	ACF Field Coordinator
PNC	Pakistan Nursing Council
LHWs Moh	National LHW program
ACF Comm	ACF Communications
Dis Coor Assi	District Coordinator Assistant, National program
HF	Health Facility Staff



ANNEX 2: Dates of Investigation

Stage	Task	Date
Prep	Preparation	21 - 29 March
Training	Training - SQUEAC Methodology Training - Community Assessment Field Test	30-Mar 31-Mar 31-Mar
Stage 1	Stage 1 data collection Data synthesis and hypothesis setting	02 - 08 April 09 - 11 April
Stage 2	Preparation + field testing Small Area Surveys BBQ weighting exercise	11-Apr 12-Apr 13-Apr
Stage 3	Form the Prior Bayes calculator + Wide Area Survey sampling Wide Area Survey	13-Apr 13-Apr 14 - 17 April
Islamabad	Travel to Islamabad Data synthesis SQUEAC Training for technical staff Form the Posterior, Action Plan meeting	19-Apr 20-Apr 21-Apr 22-Apr



ANNEX 3: Questionnaires



SQUEAC- Dadu- Questionnaire for SAM NOT-IN-PROGRAM Cases

Health District: Dadu	Union Council:
Village:	Child's ethnicity:
Mother's first & last name:	Child's first & last name:
Team:	Date: / /

1. Do you think your child is sick? آپ کو لگتا ہے آپ کا بچہ بیمار ہے؟ ☐ Yes ☐ No	
a. Name of disease:	b. Symptoms:
2. Do you think the child is malnourished? آپ کو لگتا ہے کہ کا بچہ کٹنگی کا شکار ہیں؟ ☐ Yes ☐ No ➔ Q#5	

3. Are you aware of the existence of a program that can help malnourished children? آپ کٹنگی کے شکار بچوں کے پروگرام کی موجودگی سے آگاہ ہے؟ ☐ Yes ☐ No ➔ Q#5	
4. What is the name of Program? پروگرام کا نام کیا ہے	

4. Why is your child not enrolled in program? کیوں آپ کا بچہ CMAM پروگرام میں داخلہ نہیں ہے؟	
☐ Too far, how far is it? How many hours? _____ ☐ No time too busy. Specify what the parent is doing instead. ☐ Caregiver is sick. ☐ The child was previously rejected ☐ Caregiver feels shy about coming ☐ The caregiver cannot carry more than 1 child ☐ The amount of RUTF is too little ☐ I thought it was necessary to be enrolled at hospital first. ☐ Other reasons: _____	☐ My husband refused. ☐ The children of other people were previously rejected ☐ Security problems ☐ There is one else who can take care of siblings ☐ Don't think that program can help the child

5. Was your child previously admitted to the program? آپ کا بچہ CMAM پروگرام میں پہلے داخل کیا گیا تھا؟	
☐ Yes ☐ No ➔ STOP	
6. Why is he no longer enrolled in program? کیوں اب پروگرام میں داخل نہیں ہے؟	
☐ Defaulted; When _____ why _____ ☐ Condition improved and discharged from program. ☐ Discharged because was not recovering? When _____ ☐ Other reason _____	

Thank the parent

Comments:

☐ Referred / Not referred –Why.....



Health District: dadu	UC:	
Village:	Childs's ethnicity	
Career's first & last name:	Child's first & last name:	
Team:	Date:	/ /

1. Is this the first and last time that your child has been in CMAM program? ہم پہلا اور آخری موقع ہے کہ آپ کے بچے کو کنگری پروگرام میں درج کیا گیا ہے ؟	
☐ Yes → Q#5	☐ No → Q#2

2. If No, how many times was in a CMAM program previously? پہلے پروگرام میں کتنی بار تھا؟

3. Establish why the child has returned to the program? بچہ پھر سے پروگرام کے لئے واپس کیوں آ گیا ہے؟	
A. The child default and returned default پر آ گیا تھا۔	B. The child recovered and relapsed into Malnutrition تھیک ہو گیا تھا پھر کنگری میں آ گیا ہے۔

4. What was the reason for A & B above وجہ کیا تھی

5. Do you have any other children currently enrolled in a CMAM program? آپ کے CMAM پروگرام میں اور بھی بچے ہیں؟	
☐ Yes → How many children: _____	☐ No
Why did you decide to bring the child to the CMAM program? آپ CMAM پروگرام میں بچے کو لانے کے لئے کیوں فیصلہ کیا؟	

Thanks the parent

Comments:

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Referral By: _____

ANNEX 4: Seasonal Calendar

Diseases or outbreak	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb
RTI	++			+++	+++				++	+++	+++	+++
Diarrhoea		+	+++	+++	+++	+++	++					
Scabies					+++	+++				++	+++	++
Fever										+	+++	+

Food access

Food prices					++	+++				+		
-------------	--	--	--	--	----	-----	--	--	--	---	--	--

Work involving women

Rice harvest							+	+++	+++	++		
Cotton harvest					+	++	+++	+++				
Wheat harvest	++	+++	++	+								
Vegetables	+++	+++	+++	++	+							
Sugar cane cultivate								++	+++	++		
Sugar cane harvest	++	+							+	+++	+++	++

Work involving men

Rice harvest							+	+++	+++	++		
Cotton harvest					+	++	+++	+++				
Wheat harvest	++	+++	++	+								
Vegetables	+++	+++	+++	++	+							
Sugar cane cultivate								++	+++	++		
Sugar cane harvest	++	+							+	+++	+++	++
Donkey Cart wages				+++				+	++	+++	+++	++
Daily wages						++	+++	+++	+++	++	+++	++

Travels/ migrations

Wheat Harvest (Area-Johi Taluka)	+++	+++										
Rice Harvest							+++	+++				

Climate information

Precipitation (mm)	2.4	5.4	0.4	4.2	37.4	21.3	1.5	1.3	2.5	4.8	2	0.7
Days of Rain Fall	1	1	0	1	2	2	0	0	0	1	2	1
Temperature (Avg high) Celcius	32	40	44	43	40	39	39	37	32	26	24	28

Key events

Muharam Ul Haram			+++									
Eid Ul Fitr							+++					
Eid ul adaha									+++			
Pir Gaji Shah Fair										+++		



ANNEX 5: Stage 1 Qualitative sample.

SQUEAC Stage-1 Data details						
UC	Source	KI	FGD	SSI	Other	Total
Kakar	TBA,IMAM,Teacher,TH,CNV,LHW,CW,CBO,CL,BF,SM	11	2	1	1	15
Kolcahi	TBA,IMAM,Teacher,C-Men,CNV,LHW,CBO,BF,CW	8	1	3	0	12
Mitho babar	C-Women,IMAM,Teacher,C-Men,CL,LHW,CBO	8	4	1	2	15
Gozo	TBA,Teacher,C-Men,CNV,LHW,BF,CW,M.O	9	2	3	1	15
Kande chuke	TBA,IMAM,Teacher,C-Men,CNV,LHW,PLW,C-Women	4	6	5	0	15
Sita	TBA,IMAM,Teacher,C-Men,CNV,LHW,BF,SM	9	1	2	0	12
Grand total		49	16	15	4	84



ANNEX 6: The SQUEAC Wall

