



Myanmar Mid-upper Arm Circumference and Oedema Screening Final Report

Myanmar September 2022

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LIST OF ACRONYMS

AIM TWG	Assessment Information Management Technical Working Group
AMW	Auxiliary Midwife
CHW	Community Health Worker
DHS	Demographic and Health Survey
GAM	Global Acute Malnutrition
GBV	Gender Based Violence
GNC	Global Nutrition Cluster
HRP	Humanitarian Response Plan
INC	Integrated Nutrition Centre
IYCF-E	Infant and Young Child Feeding in Emergencies
MAM	Moderate Acute Malnutrition
MDD	Minimum dietary diversity
MHAA	Myanmar Health Assistant Association
MUAC	Mid-upper Arm Circumference
OTP	Outpatient Therapeutic Programme
PiN	People in Need
PLW	Pregnant and Lactating Women
SAM	Severe Acute Malnutrition
SMART	Standardized Monitoring and Assessment of Relief and Transition
TSFP	Targeted Supplementary Feeding Programme
TST	Technical Support Team
WHZ	Weight-for-height Z-score
WVI	World Vision International

EXECUTIVE SUMMARY

In total, data was submitted by 7 partners from 23 screening exercises across 19 townships across 7 states or regions of Myanmar. Of these screening exercises, 8 were collected in a door-to-door manner, providing the most reliable proxy prevalence results. Among the 8 door-to-door screening exercises, the proxy-GAM prevalence ranged from 0.0% to 5.9%, the proxy-MAM prevalence ranged from 0.0% to 5.8%, and the proxy-SAM prevalence ranged from 0.0% to 1.3%.

One screening exercise included IYCF-E data, with the collection of the eight food groups needed to assess Minimum Dietary Diversity (2.3%). No partners were able to collect and submit information on exclusive breastfeeding or the use of infant formula for inclusion in this report.

In addition to the considerations of geographic representation, screening type, and the exhaustiveness of each exercise, data quality tests were applied to submitted age, sex, and MUAC data from 7 screening exercises. For 3 of these screening exercises the MUAC digit preference was considered 'problematic' due to rounding MUAC results to values that end in '0' or '5', suggesting that CHWs in these areas would benefit from additional training on measuring and reporting MUAC data with greater precision.

Recommendations

- Where possible, partner organisations should conduct refresher trainings for their CHWs focused on taking quality MUAC measurements and the identification of cases of oedema
- Cases of oedema should systematically be verified by clinicians or experienced practitioners during the screening exercise, either in-person or by photo
- Where possible, partner organisations should integrate IYCF-E into their screening to ensure that non-breastfed infants are referred for support
- This process of reporting, reviewing, and analysing MUAC, oedema, and IYCF-E screening data (utilising the SMART MUAC Tool) with findings consolidated in a report should be scaled up and repeated regularly in order to monitor the nutrition situation in Myanmar
- The Nutrition Cluster should consider harmonizing the MUAC and oedema reporting process so that routine screening results can be interpreted using the SMART MUAC Tool

1. INTRODUCTION

1.1 Background

The Nutrition Cluster in Myanmar was officially launched in August 2021 to coordinate and respond to the humanitarian needs in the country. The 2022 Nutrition Cluster needs according to the humanitarian response plan (HRP) increased markedly from the previous year's forecasts. While the entire people in need (PiN) estimate is 14.4 million, 6.2 million people have been targeted by the 2022 HRP and a funding requirement of 826 million USD on the one hand, on the other hand, the Nutrition Cluster forecasts 2 million PiN, 1 million targeted, and a 61 million USD in funding requirements to support the increasing needs in a complex operating environment constrained by inaccessibility, conflict and displacement among many impediments.

These funds will be needed to support programme needs among children below five years and pregnant and lactating women (PLW) across a range of programme response activities. Urgent financial resources are required to fund response activities, including the treatment of severe acute malnutrition (SAM) and moderate acute malnutrition (MAM), infant and young child feeding in emergencies (IYCF-E), preventive supplementation of food and micronutrient support for the relevant groups.

Subnational nutrition cluster coordination strengthening is a priority in Myanmar. Presently, there are about 80 cluster members at national level and subnational cluster coordination platforms are functional in Kachin, Shan North, Rakhine and Kayin. Additionally, assessments to understand the situation with respect to nutrition is also an urgent requirement. Finally, flexible humanitarian response modalities are needed to reach out to stricken communities displaced by conflict and often difficult to reach.

Nutrition programme admission data, although prone to fluctuations and rarely representative, suggests that the situation may be worsening. **Figure 1** below presents new Outpatient Therapeutic Programme (OTP) admissions (red) and new Targeted Supplementary Feeding Programme (TSFP) admissions (orange) among children 6-59 months across Rakhine State. The distinct reductions in admissions in July and August 2021 were likely due to movement restrictions during the 3rd COVID-19 wave across the country. In addition, this wave hit during the June-August lean season. In the subsequent months, the peaks in admissions may have been in response to the movement restrictions in August. Overall, the admissions data follows an upward trend.

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Figure 1 Rakhine State: New OTP and TSFP Admissions among Children 6-59 Months

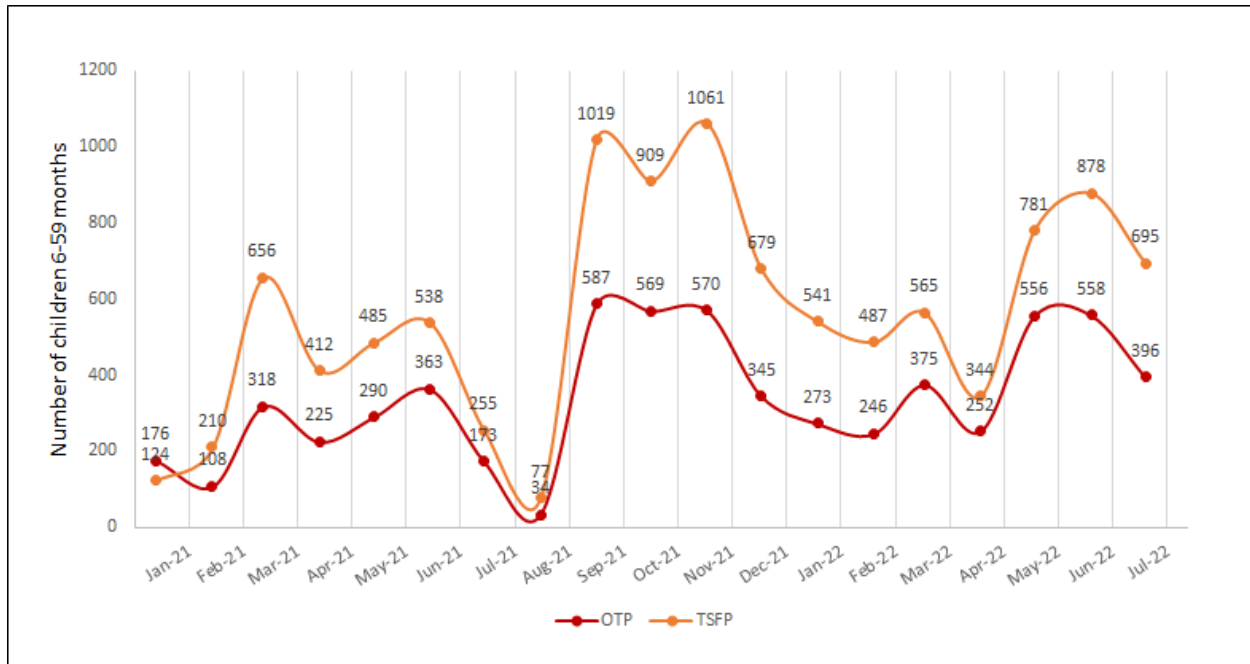
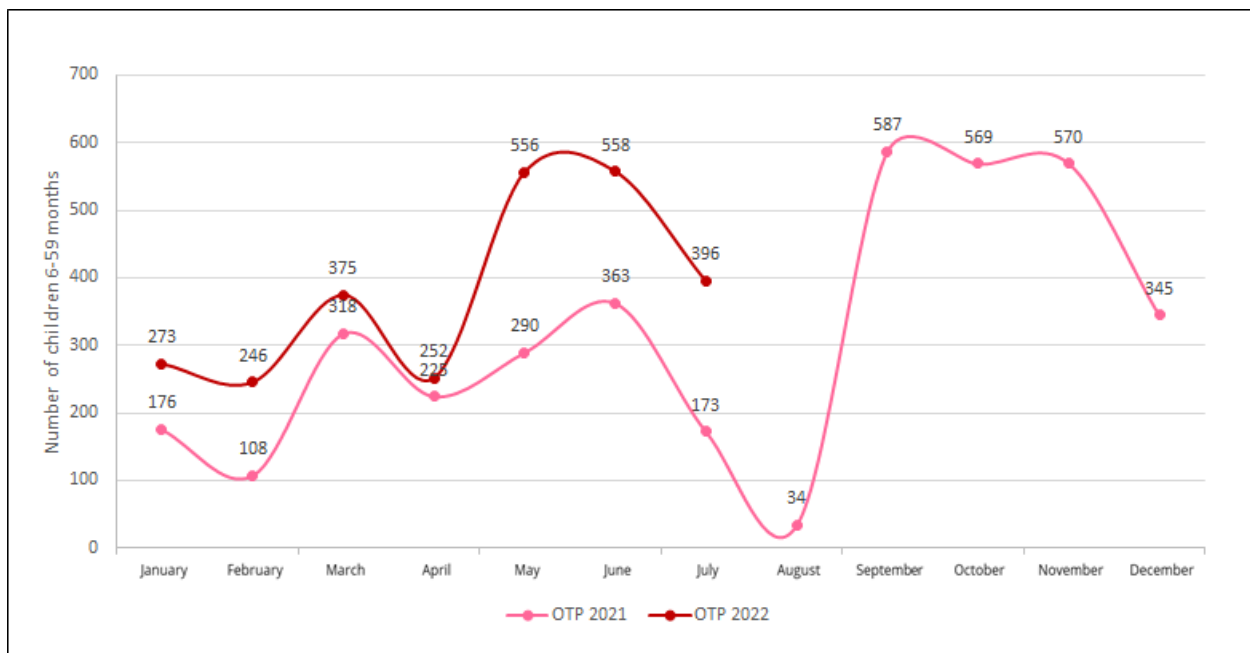


Figure 2 below contrasts new OTP admissions between 2021 (pink) and 2022 (red). This data suggests that the number of admissions has increased relatively each month of 2022 as compared to the previous year, suggesting a possible deterioration in the nutrition status of the population.

Figure 2 Rakhine State: New OTP Admissions among Children 6-59 Months 2021-2022



There is a scarcity of recent representative information on the nutritional status in Myanmar, except for the 2015-16 Demographic and Health Survey (DHS). Although partner organisations report mid-upper arm circumference (MUAC) screening data to the Nutrition Cluster monthly, these screening exercises are not representative, are rarely exhaustive, and have limitations in terms of quality and interpretation.

Implementing assessments are generally very restricted and the only possible evaluation options are MUAC screenings. In 2021 a pilot screening was conducted in Rakhine and Yangon by Action Contre la Faim, WVI and MHAA, a local NGO. Technical support was being provided by the Action Against Hunger Regional Information Management Specialist and UNICEF including plausibility checks on the data quality. The pilot screening results were as follows:

Action Contre la Faim – A total of 3,113 children were screened in various townships and villages in Sittwe area and 282 children with varying forms of acute malnutrition and or oedema were identified during the reporting period. Proxy-GAM was 4.0%, proxy-MAM was 3.4% and proxy-SAM was 0.6%.

World Vision International – A total of 1,984 children were screened in various townships and villages in Yangon – Dagon Seikkan area. 16 children with varying forms of acute malnutrition and or oedema were identified during the reporting period. Proxy-GAM was 0.4% and proxy-MAM was 0.4%. No cases of SAM were identified. The 16 children with acute malnutrition identified were referred for management. 14 of them were below 2 years of age.

Myanmar Health Assistant Association (MHAA) – A total of 1,820 children were screened in various townships and villages in Rakhine – Mrauk-U area and 52 children with varying forms of acute malnutrition and or oedema were identified during the reporting period. The results of the pilot project conducted by MHAA indicated a proxy-GAM of 1.3% (proxy-MAM was 1.1% and proxy-SAM was 0.2%). A total of 52 children were identified with varying forms of acute malnutrition and among the children with SAM (8), 5 of them were below 2 years of age.

1.2 Justification

Given that conventional surveys and assessments to provide robust population representative and reliable data are not currently possible to implement in Myanmar, MUAC and oedema screening data are needed to produce proxy estimates of acute malnutrition to inform nutrition programming.

1.3 Aims and Objectives

The primary objective of the MUAC screening was to detect cases of acute malnutrition and refer children 6-59 months for treatment.

The secondary objective was to detect infants under six months who are not exclusively breastfed for referral or counselling if possible as well as get a sense of dietary diversity among children 6-23 months.

The tertiary objective was to utilise the MUAC and IYCF-E screening data to better understand the nutrition situation in the screening areas.

2. METHODOLOGY

2.1 Screening Approach

The screening of children under five years of age for MUAC (children 6-59 months) and IYCF-E (children <24 months) took place within villages in partner programme areas. The screenings were encouraged to take place as exhaustive, door-to-door screenings conducted by community health workers (CHW) or in some cases by auxiliary midwives (AMW) in their normal areas of operation. All age eligible children were to be screened.

2.2 Data collected, case definitions and inclusion criteria

Acute malnutrition is a form of undernutrition caused by an inadequate food intake (quantity, quality and utilization) and/or illness that results in sudden weight loss or oedema (fluid retention), coupled with other underlying and primary causes.

Acute malnutrition is classified by level of severity as Severe Acute Malnutrition (SAM) or Moderate Acute Malnutrition (MAM) according to weight-for-height z-score (WHZ), mid-upper arm circumference (MUAC), and the presence or absence of bilateral pitting oedema. All children 6-59 months were to be screened for acute malnutrition and detected cases of SAM and MAM were to be referred for treatment during the screening whenever possible. The thresholds presented in **Table 1** were applied during this screening exercise:

Table 1: MUAC and oedema thresholds for acute malnutrition among children 6-59 months

Indicator	Moderate Acute Malnutrition	Severe Acute Malnutrition
Mid-upper arm circumference (MUAC)	≥ 115 and < 125 mm	< 115 mm
Bilateral pitting oedema	Absent	Present

Exclusive breastfeeding under six months is defined by WHO and UNICEF as the practice whereby an infant receives only breast milk from the mother or a wet nurse or expressed breast

milk, without any additional food or drink, not even water. For the purposes of this screening exercise, it was operationalised as the percentage of infants 0–5 months of age who were fed exclusively with breast milk during the previous day. This was determined based on four key questions around if the child was breastfed, if the child consumed liquids, if the child consumed infant formula, and if the child consumed any soft, semi-solid, or solid foods the previous day, as presented in **Annex 5**. In order for an infant to be considered exclusively breastfed, the caregiver should respond “yes” to breastfeeding but “no” to the three other questions, as demonstrated in **Table 2** below.

Table 2: Examples of Exclusive Breastfeeding Determination during Screening

Breastfed	Yes	Breastfed	Yes	Breastfed	No
Liquids	No	Liquids	Yes	Liquids	No
Infant formula	No	Infant formula	No	Infant formula	Yes
Foods	No	Foods	No	Foods	No
Exclusively breastfed		NOT exclusively breastfed		NOT exclusively breastfed	

Minimum dietary diversity (MDD) is defined as children 6-23 months of age who consumed foods and beverages from five or more of eight food groups during the previous day. The eight food groups used for tabulation of this indicator are the following:

- (A) Breast Milk
- (B) Grains, Roots, Tubers, and Plantains *examples: Potato, Rice, Corn, Wheat*
- (C) Pulses (Beans, Peas, lentils), Nuts and Seeds *examples: Chickpeas, split yellow peas, Peanut, Sunflower seeds, Pumpkin seeds*
- (D) Dairy Products (Milk, Yogurt, Cheese)
- (E) Flesh food (Meat, Fish, Poultry, Organ, Meats) *examples: Chicken, Beef*
- (F) Eggs
- (G) Vitamin-A rich fruits and vegetables *examples: Carrots, Papaya, Pumpkin*
- (H) Other fruits and vegetables *examples: Watergrass, Lady finger, Eggplant, Banana, Watermelon*

2.3 Organisation and Coordination

At national level this exercise was organised, coordinated, and supported by Action Contre la Faim, UNICEF, Save the Children, and the AIM-TWG. These agencies also led the Phase I training. For the Phase II training and data collection, partners organised, coordinated, and supported their CHWs in their respective programme areas, with targeted support from the above-mentioned national level actors as needed.

2.4 Personnel and Training

The training was designed to be cascaded from national to programme level. The training was structured as two phases:

Phase I: Training of partners

This training functioned as a remote workshop, where partners were trained on how to both manage their screening exercise as well as how to train their CHWs. The training was conducted primarily in Burmese, with slides in English (Phase I only) and Burmese (to cascade to Phase II). The following topics were covered and discussed:

- Anthropometric data collection
- The MUAC Tool for data collation and analysis
- IYCF-E data collection
- Data reporting
- Referrals and GBV
- Mobile data collection (optional)
- ENA for SMART for data quality (optional)
- Standardization test (optional)

There was also a supplementary session to discuss how to mitigate challenges to data collection in the field as well as time for outstanding questions around planning.

Phase II: Training of CHWs

Where feasible, the training of CHWS by partners were to take place in-person in the programme areas. The slides in Burmese from the Phase I training were made available for partners to use in training their CHWs. The available training slides covered the following:

- Anthropometric data collection
- IYCF-E data collection
- Referrals and GBV
- Mobile data collection (optional)

2.5 Data Collection, Management and Supervision

Data was collected in the manner most appropriate for partners. In most cases, partners followed their standard MUAC screening procedures, utilising their existing paper-based tools and supervision structures. Where additional tools were needed, the paper-based forms for MUAC and oedema screening (**Annex 4**) and for IYCF-E (**Annex 5**) were made available. Further, an electronic questionnaire was developed by UNICEF for this screening exercise and was available for use by all partners.

Where new data could not be collected by the first week of September 2022, partners were encouraged to report their most recent screening data that had taken place within the six months prior to the reporting deadline, ideally between March and August 2022.

All partners were requested to submit their results consolidated in the SMART MUAC Screening Tool. In some cases, partners also submitted their raw datasets for additional analysis and testing.

2.6 Data Entry and Analysis

Partners reported the results of their respective MUAC screenings using the SMART MUAC Screening Tool in **Annex 2** following the guidance in **Annex 1**. This same tool was used for basic analysis to generate estimates of proxy-GAM, proxy-MAM, and proxy-SAM from MUAC and oedema results.

The IYCF-E results of these screening were requested to be reported in the Excel database presented in **Annex 3** and were analysed using Excel.

3. RESULTS

3.1 Data description and data quality

Partners were encouraged to collect new MUAC and IYCF-E data for this exercise, and to report recent screening data where this was not feasible. The **Table 3** below summarises the data contributions by Action contre la Faim, Mekong Economics, Parami Development Network, Plan International, Progetto Continenti Myanmar, Tdh-L, and World Vision International that are reflected in this report.

Table 3 Data Contributions by Partners in this Report

Organisation	Collected new MUAC data	Collected new IYCF-E data	Submitted recent MUAC data	Submitted recent IYCF-E data
Action contre la Faim	x		x	
Mekong Economics			x	x
Parami Development Network			x	
Plan International			x	
Progetto Continenti Myanmar	x			
Tdh-L	x			
World Vision International			x	

In addition to sharing a consolidated summary of each screening exercise in the SMART MUAC Tool, disaggregated MUAC data were shared by Mekong Economics, Progetto Continenti Myanmar, Parami Development Network, and World Vision International which allowed for greater analysis and tests of data quality.

Where disaggregated sex, age, and MUAC data were available, it was possible to apply three of the ten statistical tests available in the ENA for SMART Plausibility Test. The sex ratio examines if the ratio of male to female children is close to 1:1 and the age ratio examines if the ratio of children 6-29 months to 30-59 months is around 0.85, as would be expected for a normal population of children. The MUAC digit preference test assesses the last digits of each MUAC measurement to see if there has been rounding. In total, raw data was submitted from 7 screening exercises across 7 townships across 5 states or regions. The results of the tests are presented in **Table 4** below.

All 7 screening exercises had a sex ratio that was considered ‘excellent’ or ‘good’, indicating there was no bias in the screening of male or female children. Among the 4 screening exercises where the necessary age data was shared for the test to be conducted, all had an age ratio that was considered ‘excellent’ or ‘good’, indicating there was no bias in the screening of younger or older children. Three of the 7 screening exercises had a MUAC digit preference was considered ‘problematic’ due to rounding MUAC results to values that end in ‘0’ or ‘5’, suggesting that CHWs in this area would benefit from additional training on measuring and reporting MUAC data. However, it should also be noted that this test is sensitive when applied to a small number of children as was the case for both of the screening exercises in Chin State (51 and 28 children).

Table 4 ENA for SMART Plausibility Test Indications of MUAC Data Quality by Township

General Information					ENA for SMART Statistical Test Result and Interpretation		
N ¹	Region State or	Organisation	Township	Number of children 6-59 months	Sex Ratio ²	Age Ratio	MUAC Digit Preference ³
1	Chin	Mekong Economics	Falam	51	(p=0.069) good	(p=0.071) good	(30) problematic
2	Chin	Mekong Economics	Hakha	28	(p=0.257) excellent	(p=0.959) excellent	(31) problematic
8	Magway	Projetto Continenti Myanmar	Minbu	128	(p=1.000) excellent	N/A ⁴	(8) good
9	Magway	Projetto Continenti Myanmar	Natmauk	166	(p=0.162) excellent	N/A	(16) acceptable
19	Sagaing	Mekong Economics	Kale	121	(p=0.785) excellent	(p=0.422) excellent	(6) excellent
23	Shan	Parami Development Network	Keng Tung	131 ⁵	(p=0.097) good	N/A	(37) problematic
20	Yangon	World Vision International	Dagon Seikkan	4,009	(p=0.048) acceptable	(p=0.704) excellent	(10) good

3.2 Acute Malnutrition using MUAC/Bilateral Pitting Oedema

Tables 5-7 below present the results of the screening data collected on behalf of this exercise, as well as recent screening data that was submitted by partners. **Table 5** contains the following information:

N - a unique identifier number ascribed to each screening exercise for the purposes of this report.

Organisation - the partner organisation that implemented the screening exercise for their area.

¹ Screening number corresponds to the screening number in the first column of Table 5

² The ENA for SMART Plausibility Test interprets a sex or age ratio with a p-value >0.1 as 'excellent', >0.05 as 'good', >0.001 as 'acceptable' and <=0.001 as 'problematic'

³ The ENA for SMART Plausibility Test interprets a score of 0-7 as 'excellent', 8-12 as 'good', 13-20 as 'acceptable', and >20 as 'problematic'

⁴ In cases where individual child data was summarized in "4. Tally Sheet 2 Optional" of the SMART MUAC Tool, only sex and MUAC value grouped by children <2 years of age or >2 years of age were reported. In the absence of age data in months per child, the age ratio test of the ENA Plausibility Test was not applicable.

⁵ Dataset included children 6-23 months only, therefore the age ratio test of the ENA Plausibility Test was not applicable.

Township - the township within which the screening exercise took place.

% of wards, village tracts, or villages screened - for door-to-door screenings, this summarises the percentage and number of wards, village tracts, or villages screened over the total number of wards, village tracts, or villages in the township. This aims to reflect how geographically representative the screening data may be for the township.

Population - whether the screening was conducted among the local population, a displaced population, or both.

Screening dates - the approximately month or months when the screening exercise took place.

Screening type - aims to clarify the manner in which the screenings were conducted. The door-to-door screenings are considered more representative and of higher quality for the generation of proxy prevalence.

Total population of children 6-59 months - for door-to-door screenings, the estimated total number of children 6-59 months in the screening area.

Number (%) of children 6-59 months screened - for door-to-door screenings, the total number and percentage of children 6-59 months screened of the total population in the screening area. This information aims to reflect how exhaustive the screenings were. The greater the % of children screened the greater confidence that proxy prevalence reflects the true nutrition status of the population.

% of children > 2 years of age - In accordance with the SMART MUAC Screening Tool guidance (see **Annex 1**) where less than 66% of children screened were over two years of age, weighting by age was applied to generate proxy prevalence.

Results weighted by age - if the results were weighted by age (yes/no).

Number of cases of oedema - the number of identified oedema cases.

(n) % proxy-GAM MUAC <125mm and/or oedema - the proxy prevalence of GAM for the screening area.

(n) % proxy-MAM MUAC ≥ 115 and < 125 mm and no oedema - the proxy prevalence of MAM for the screening area.

(n) % proxy-SAM MUAC <115mm and/or oedema - the proxy prevalence of SAM for the screening area.

In total, data was submitted by 7 partners from 23 screening exercises across 19 townships across 7 states or regions of Myanmar. **Table 5** below presents the results of 22 screening exercises which collected MUAC and oedema data.

Screening exercises that are shaded in grey are considered less representative data because these screenings were not conducted in an exhaustive door-to-door manner and the results should be interpreted with caution. Here are some practical examples:

- **screening exercise 3** was conducted at a fixed distribution point. In such cases, there is the risk that more ill or malnourished children may remain in the home and not make it to the screening point, which can lower the proxy-prevalence results.
- **Screening exercise 11** was conducted at an Integrated Nutrition Centre (INC) as part of an ongoing nutrition programme. In such cases, there can be a very inflated proxy-GAM (49.0%) because this functioned as a screening of children who had been referred for services.

Data from 8 screening exercises in **Table 5** were collected in a door-to-door manner, providing the most reliable proxy prevalence results. As previously mentioned, the greater the % of children screened, the greater confidence that proxy prevalence reflects the true nutrition status of the population. In this case, the three screening exercises that screened children most exhaustively in the screening areas were:

- **Screening exercise 14** with an estimated 97.7% of children 6-59 months screened
- **Screening exercise 20** with an estimated 95.1% of children 6-59 months screened
- **Screening exercise 18** with an estimated 88.7% of children 6-59 months screened

The geographic representation of screening exercises varied, with some screening exercises presenting a very small proportion of all wards, village tracts, or villages across a township, and therefore only representing the specific screening areas. In the case of screening exercise 14 and 15, however, if there was no duplication in the villages screened between the two exercises, these data may represent the majority of the Sittwe Township (up to 65 of 88 villages).

Data from 12 screening exercises had a smaller proportion of children 24-59 months than anticipated (<66%), and therefore age weighting was applied using the SMART MUAC Tool as a corrective measure.

Among the 8 door-to-door screening exercises, the proxy-GAM prevalence ranged from 0.0% to 5.9%, the proxy-MAM prevalence ranged from 0.0% to 5.8%, and the proxy-SAM prevalence ranged from 0.0% to 1.3%.

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Table 5 MUAC and Oedema Screening Results among Children 6-59 Months by Region or State and Township 2022

N	Organisation	Township	% of wards, village tracts, or villages screened	Population	Screening dates	Screening type	Total estimated population of children 6-59 months	Number (%) of children 6-59 months screened	% of children > 2 years of age	Results weighted by age	Number of cases of oedema	(n) proxy-GAM MUAC <125mm and/or oedema	%	(n) proxy-MAM MUAC ≥ 115 and < 125 mm and no oedema	%	(n) proxy-SAM MUAC <115mm and/or oedema	%
Chin State																	
1	Mekong ⁶ Economics	Falam	-	Local and displaced	Jul-Aug 2022	Screening at home or church	-	51	76.5%	no	0	(0) 0.0%		(0) 0.0%		(0) 0.0%	
2	Mekong Economics	Hakha	-	Local and displaced	Jul-Aug 2022	Screening at home or church	-	28	71.4%	no	0	(1) 3.6%		(1) 3.6%		(0) 0.0%	
Kachin State																	
3	Plan International	Bhamo	-	Displaced	Feb-Jul 2022	Distribution point	-	441	68.0%	no	0	(6) 1.4%		(6) 1.4%		(0) 0.0%	
4	Plan International	Mansi	-	Displaced	Feb-Jul 2022	Distribution point	-	380	66.8%	no	0	(3) 0.8%		(3) 0.8%		(0) 0.0%	
5	Plan International	Moegaung	-	Displaced	Feb-Jul 2022	Distribution point	-	148	66.2%	no	0	(1) 0.7%		(0) 0.0%		(1) 0.7%	
6	Plan International	Moemauk	-	Displaced	Feb-Jul 2022	Distribution point	-	700	66.7%	no	0	(14) 2.0%		(14) 2.0%		(0) 0.0%	
7	Plan International	Waingmaw	-	Displaced	Feb-Jul 2022	Distribution point	-	582	66.7%	no	0	(31) 5.4%		(26) 4.5%		(5) 0.9%	

⁶ Rows that are shaded in grey are considered less representative data because these screenings were not conducted in an exhaustive door-to-door manner

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N	Organisation	Township	% of wards, village tracts, or villages screened	Population	Screening dates	Screening type	Total estimated population of children 6-59 months	Number (%) of children 6-59 months screened	% of children > 2 years of age	Results weighted by age	Number of cases of oedema	(n) proxy-GAM <i>MUAC <125mm and/or oedema</i>	% (n) proxy-MAM <i>MUAC ≥ 115 and < 125 mm and no oedema</i>	(n) proxy-SAM <i>MUAC <115mm and/or oedema</i>	%
Magway Region															
8	Projetto Continenti Myanmar	Minbu	-	Local	Aug 2022	Distribution point	-	128	58.6%	yes	0	(15) 10.4%	(14) 9.8%	(1) 0.6%	
9	Projetto Continenti Myanmar	Natmauk	-	Local	Aug 2022	Distribution point	-	166	60.2%	yes	0	(52) 29.2%	(52) 29.2%	(0) 0.0%	
Rakhine State															
10	Action contre la Faim	Buthidaung	3.5% (12/339) villages	Local	Aug 2022	Door-to-door	2,694	1,341 (49.8%)	67.5%	no	0	(35) 2.7%	(18) 1.4%	(17) 1.3%	
11	Action contre la Faim	Buthidaung	-	Local and displaced	Aug 2022	Fixed INC ⁷	-	220	23.6%	yes	0	(83) 49.0%	(66) 45.6%	(17) 3.4%	
12	Action contre la Faim	Maungdaw	-	Local and displaced	Aug 2022	Fixed INC	-	93	18.3%	yes	0	(33) 31.9%	(29) 30.1%	(4) 1.8%	
13	Action contre la Faim	Rathaedau ng	7.6% (15/197) villages	Local and displaced	Aug 2022	Door-to-door	1,929	1,051 (54.5%)	64.9%	yes	0	(0) 0.0%	(0) 0.0%	(0) 0.0%	
14	Action contre la Faim	Sittwe	39.8% (35/88) villages	Local	May 2022	Door-to-door	7,155	6,988 (97.7%)	64.3%	yes	0	(190) 2.6%	(169) 2.3%	(21) 0.3%	

⁷ Integrated Nutrition Centre, a term used for an OTP by Action contre la Faim in the Myanmar context

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N	Organisation	Township	% of wards, village tracts, or villages screened	Population	Screening dates	Screening type	Total estimated population of children 6-59 months	Number (%) of children 6-59 months screened	% of children > 2 years of age	Results weighted by age	Number of cases of oedema	(n) proxy-GAM <i>MUAC <125mm and/or oedema</i>	% <i>MUAC ≥ 115 and < 125 mm and no oedema</i>	(n) proxy-MAM <i>MUAC <115mm and/or oedema</i>	%
15	Action contre la Faim	Sittwe	34.1% (30/88) villages	Local and displaced	Aug 2022	Door-to-door	5,862	4,237 (72.3%)	65.8%	yes	0	(13) 0.8%	(13) 0.8%	(0) 0.0%	
16	Action contre la Faim	Sittwe	-	Local and displaced	Aug 2022	Fixed health centre / mobile teams	-	1,719	54.1%	yes	0	(133) 6.9%	(120) 6.3%	(13) 0.6%	
17	Action contre la Faim	Sittwe	-	Local and displaced	Aug 2022	Fixed health centre / mobile teams	-	2,458	40.7%	yes	4 ⁸	(1,649) 62.7%	(936) 36.2%	(713) 26.5%	
18	Action contre la Faim	Thandwe	5.7% (14/244) villages	Local and displaced	Aug 2022	Door-to-door	1,222	1,084 (88.7%)	74.4%	no	0	(20) 1.9%	(19) 1.8%	(1) 0.1%	
Sagaing Region															
19	Mekong Economics	Kale	1.9% (3/156) villages	local and displaced	Jul-Aug 2022	Screening at home or church	-	121	60.3%	yes	0 ⁹	(1) 0.9%	(1) 0.9%	(0) 0.0%	
Yangon Region															

⁸ All four oedema cases were confirmed by medical doctors or nurses at an Action contre la Faim INC

⁹ Although during the screening exercise 14 cases of oedema were reported, these cases were not verified and therefore were not included in the calculation of any proxy prevalence

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N	Organisation	Township	% of wards, village tracts, or villages screened	Population	Screening dates	Screening type	Total estimated population of children 6-59 months	Number (%) of children 6-59 months screened	% of children > 2 years of age	Results weighted by age	Number of cases of oedema	(n) % proxy-GAM <i>MUAC <125mm and/or oedema</i>	(n) % proxy-MAM <i>MUAC ≥ 115 and < 125 mm and no oedema</i>	(n) % proxy-SAM <i>MUAC <115mm and/or oedema</i>
20	World Vision International	Dagon Seikkan	28.2% (11/39) wards and village tracts	Local and displaced	Apr 2022	Door-to-door	4,214	4,009 (95.1%)	75.3%	no	0	(10) 0.2%	(10) 0.2%	(0) 0.0%
21	Tdh-L	Hlaing Thar Yar	62.1% (18/29) wards and village tracts	Local and displaced	Aug 2022	Door-to-door	35,964 ¹⁰	5,672 (15.8%)	65.9%	yes	0	(337) 5.9%	(333) 5.8%	(4) 0.1%
22	Tdh-L	Shwe Pyi Thar	51.9% (14/27) wards and village tracts	Local and displaced	Aug 2022	Door-to-door	21,277	2,627 (12.3%)	63.8%	yes	0	(145) 5.3%	(143) 5.2%	(2) 0.1%

Although MUAC screenings most frequently target children 6-59 months, in some cases this age range is narrowed. Parami Development Network submitted MUAC and oedema data among a subset of children 6-23 months in Keng Tung Township of Shan State, as presented in **Table 6** below. More than a third of the estimated total number of children 6-23 months were screened in these

¹⁰ For both Hlaing Thar Yar and Shwe Pyi Thar, Total estimated population of children 6-59 months based on estimates of the 0–59-month population, adjusted for a 6–59-month population (0–59-month estimate*.90)

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30 villages and the findings suggest a proxy-GAM of 3.8% among this age group. However, further caution should be applied when interpreting these results, as MUAC has a known bias towards younger children¹¹.

Table 6 MUAC and Oedema Screening Results among Children 6-23 Months Shan 2022

N	Organisation	Township	% of wards, village tracts, or villages screened	Population	Screening dates	Screening type	Total estimated population of children 6-23 months	Number (%) of children 6-23 months screened	Number of cases of oedema	(n) % proxy-GAM <i>MUAC <125mm and/or oedema</i>	(n) % proxy-MAM <i>MUAC ≥ 115 and < 125 mm and no oedema</i>	(n) % proxy-SAM <i>MUAC <115mm and/or oedema</i>
23	Parami Development Network	Keng Tung	16.9% (30/718) villages	Local	Jul 2022	Door-to-door	340	131 (38.5%)	0	(5) 3.8%	(5) 3.8%	(0) 0.0%

3.3 Infant and Young Child Feeding in Emergencies

Partners were asked, where possible, to collect information on exclusive breastfeeding and use of infant formula among infants under six months of age as well as the number of food groups consumed by children six to twenty-three months of age. For this report, Mekong Economics collected and submitted data on the number of food groups consumed by children 6-23 months in three villages in Kale Township of Sagaing Region. Although data was collected for a small number of children in this age group (48), just 2 of these children (4.2%) had achieved MDD by consuming the recommended 5 or more food groups¹² the day prior to the screening, as presented in **Table 7** below.

¹¹ Roberfroid, D, Huybregts, L, Lachat, C, Vrijens, F, Kolsteren, P, Guesdaon, B (2015) Inconsistent diagnosis of acute malnutrition by weight-for-height and mid-upper arm circumference: contributors in 16 cross-sectional surveys from South Sudan, the Philippines, Chad, and Bangladesh

¹² Eight food groups assessed: (A) Breast Milk (B) Grains, Roots, Tubers, and Plantains (C) Pulses, Nuts and Seeds (D) Dairy Products (E) Flesh food (F) Eggs (G) Vitamin-A rich fruits and vegetables (H) Other fruits and vegetables

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Table 7 IYCF-E Screening Results from Sagaing 2022

N	Organisation	Township	% of wards, village tracts, or villages screened	Population	Screening dates	Screening type	Total population of children 0-23 months	Number (%) of children 0-23 months screened	(n) % of exclusively breastfed infants <6 months	(n) % of infants <6 months who consumed infant formula	(n) % of children 6-23 months that consumed ≥5 food groups
19	Mekong Economics	Kale	1.9% (3/156) villages	local and displaced	Aug 2022	Screening at home or church	-	48 ¹³	-	-	(2) 4.2%

¹³ These 48 children were 6-23 months, as children <6 months were not screened

3.4 Limitations

Screenings are highly intensive activities and are prone to the following limitations by design:

- When many data collectors are used, providing direct technical training, coaching, and supervision can be challenging and lack of supervision or support may reduce data quality.
- Where weight-for-height data is not collected, a proportion of wasting cases will go undetected during a screening.
- Much of the screening data included in this report were collected at central locations such as health facilities, nutrition programmes, or food distribution sites. Such screening types are not representative and are prone to bias due to the under or over-representation of ill and malnourished children, as well as younger children, and therefore must be interpreted with caution. Screening data is most robust when it is conducted in a door-to-door manner and where all or nearly all eligible children are assessed.
- Townships with a small proportion of screened villages/wards (low geographic representation) are less representative at township level and should be interpreted appropriately. Further, data collected in a specific area cannot be extrapolated to other areas with confidence.
- Most of the screening data included in this report was collected in areas benefiting from nutrition programming. Extrapolation to areas without similar programming is limited.

4. CONCLUSIONS AND RECOMMENDATIONS

In total, data was submitted by 7 partners from 23 screening exercises across 19 townships across 7 states or regions of Myanmar. Of these screening exercises, 8 were collected in a door-to-door manner, providing the most reliable proxy prevalence results. Among the 8 door-to-door screening exercises, the proxy-GAM prevalence ranged from 0.0% to 5.9%, the proxy-MAM prevalence ranged from 0.0% to 5.8%, and the proxy-SAM prevalence ranged from 0.0% to 1.3%.

One screening exercise included IYCF-E data, with the collection of the eight food groups needed to assess MDD. No partners were able to collect and submit information on exclusive breastfeeding or the use of infant formula for inclusion in this report.

In addition to the considerations of geographic representation, screening type, and the exhaustiveness of each exercise, data quality tests were applied to submitted age, sex, and MUAC data from 7 screening exercises. For 3 of these screening exercises the MUAC digit preference was considered 'problematic' due to rounding MUAC results to values that end in '0' or '5', suggesting that CHWs in these areas would benefit from additional training on measuring and reporting MUAC data with greater precision.

Considering the findings contained in this report, the following recommendations are advised:

- Where possible, partner organisations should conduct refresher trainings for their CHWs focused on taking quality MUAC measurements and the identification of cases of oedema
- Cases of oedema should systematically be verified by clinicians or experienced practitioners during the screening exercise, either in-person or by photo
- Where possible, partner organisations should integrate IYCF-E into their screening to ensure that non-breastfed infants are referred for support
- This process of reporting, reviewing, and analysing MUAC, oedema, and IYCF-E screening data (utilising the SMART MUAC Tool) with findings consolidated in a report should be scaled up and repeated regularly in order to monitor the nutrition situation in Myanmar
- The Nutrition Cluster should consider harmonizing the MUAC and oedema reporting process so that routine screening results can be interpreted using the SMART MUAC Tool

5. ANNEXES

ANNEX 1: SMART MUAC Screening Tool: Instructions for data collection and reporting





Instructions for data collection and reporting in MUAC screenings

The primary purpose of MUAC screening is to find and refer the children eligible for nutrition treatment. The secondary purpose is to use screening data to better understand the nutrition situation in the area.

Please follow these simple instructions. If you do not follow these instructions and do not use included data collection and analysis tools in the attached Excel file your data cannot be used for the secondary objective.

1. Data collection:

Use tally sheet included on the **2. Tally Sheet** tab of the Excel file.

Note, you do not need to establish the exact age of the child, only establish whether (1) the child is in the eligible age range (e.g., 6-59 months), and (2) whether the child is above or below 2 years of age

Optional: Instead of **2. Tally Sheet** you can use **4. Tally sheet 2 Optional**

Using tally sheet **4** will be much more complex, since it requires recording exact MUAC measurement of each child, and then entering these data into Excel using the same **4. Tally sheet 2 Optional** page

However, using the **4. Tally sheet 2 Optional** is highly recommended if feasible, since recording MUAC measurements for each child allows for much more advanced analysis of the quality of data and increases confidence when using these data for decision making.

Using this option is especially useful if doing exhaustive door-to-door outreach screenings

2. Data reporting

For reporting you will only use attached excel file

- a. First, fill out carefully all fields on the **1. Title Page**. Note, your report will not be accepted unless **1. Title Page** is filled out
- b. If you used **2. Tally Sheet** for data collection in the field, enter the tallied numbers from your sheets into the table on page **3. Results** of the attached Excel file. Follow instructions provided under the table, they are very simple and self-explanatory. Stop here, you are ready to send your report.
- c. If you used **4. Tally sheet 2 Optional** for data collection in the field, first enter the data from your tally sheets into Excel file attached, page **4. Tally sheet 2 Optional**. After entering the data, tally the numbers of children and enter them in the table on page **3. Results**. Stop here, now you are ready to send your report.


3. Data interpretation

Interpretation of data collected in MUAC screenings is a very complex process, and depends on many factors – the setting, sample size, quality of data, representativeness by age and sex, coherence with other available data, etc. It will be conducted by nutrition technical staff at higher levels.

If you are doing MUAC screening of pregnant and lactating women, use **5. Tally sheet PLW** in attached Excel file for data collection in the field.

For reporting, you still must fill out **1. Title Page** information in full. Then report the number of PLW in two categories – below 230 mm and above or at 230 mm, that's all.

ANNEX 2: SMART MUAC Screening Tool

	
Please review all fields and modify according to your setting	
Background	
Date(s) of Assessment	
Ministry/ NGO/ Agency supporting the assessment	
State/ Province	
District	
Sub-district / Town or Village(s)	
Type of the population screened: (1) only local population, (2) both local and displaced population, (3) only displaced population	
Brief description of the screening setting: (1) door-to-door outreach community screening for referral, (2) screening of all children combined with the vaccination campaign, (3) hospital (4) fixed health center or health post, (5) mobile health team, (6) food or commodity distribution point, (7) other setting -- describe	
If screening at health facility or by mobile health team, indicate whether: (1) only sick children were screened, or (2) healthy children coming for check-up visits or vaccination were screened as well as the sick	
Who measured children?: (1) community volunteers, (2) medical staff (nurses, doctors), (3) other -specify	
Age ranges included (months)	
How did you determine age? Did you use: (1) age (<24 months v. ≥24 months); or (2) height (<87 v. ≥87cm)	
Total estimated size of the target population (children 6-59 months) -- for door to door and vaccination campaign screenings only	
Total number of children screened	

▶ **1. Title Page** | ▶ 2. Tally Sheet | ▶ 3. Results | ▶ 4. Tally sheet : ... + ⋮ ◀



Nutrition Assessment Tally Sheet (MUAC)

Date: _____

Location (State/ County): _____

Males

	Oedema	<115 mm		115-124 mm			≥125 mm						
< 2 Years Old	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000
	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000
	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000
	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000
≥ 2 Years Old	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000
	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000
	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000
	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000

Females

	Oedema	<115 mm		115-124 mm			≥125 mm						
< 2 Years Old	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000
	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000
	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000
	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000
≥ 2 Years Old	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000
	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000
	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000
	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000

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MUAC SCREENING MEASUREMENT and TALLY SHEET

Village / Camp / Location: Measurer: Date:

INSTRUCTIONS:

Determine if the child is 2 years or older or below 2 years of age, and use the left side for children less than 2 years old and the right side for children 2 years or older. Record the sex of the child in the first column (Male or Female). Record the MUAC measurement, to the nearest mm, in the 'MUAC measurement' column. Mark an 'X' in **EITHER** the normal or moderate or severe column as per the MUAC measurement. Check for Oedema and record in the last column. Add the totals in the last row.

6 Months - <2 Years Old							≥ 2-5 Years Old						
Child No	Sex (M / F)	MUAC measurement (to nearest mm)	Normal ≥125mm (Green)	Moderate 115-124mm (Yellow)	Severe <115mm (Red)	Oedema (Y / N)	Child No	Sex (M / F)	MUAC measurement (to nearest mm)	Normal ≥125mm (Green)	Moderate 115-124mm (Yellow)	Severe <115mm (Red)	Oedema (Y / N)
1							1						
2							2						
3							3						
4							4						
5							5						
6							6						
7							7						
8							8						
9							9						
10							10						
11							11						
12							12						
13							13						
14							14						
15							15						
16							16						
17							17						
18							18						
19							19						
20							20						

Page 1

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Add header



Nutrition Assessment Results

		Males		Females		Total		Weighted Total**	Percent of children over 2 years of age in the sample
		N	%	N	%	N	%		
< 2 Years Old	Oedema		#DIV/0!		#DIV/0!	0	#DIV/0!		
	<115 mm		#DIV/0!		#DIV/0!	0	#DIV/0!		
	115-124 mm		#DIV/0!		#DIV/0!	0	#DIV/0!		
	≥125 mm		#DIV/0!		#DIV/0!	0	#DIV/0!		
	Total	0	#DIV/0!	0	#DIV/0!	0	#DIV/0!		
≥ 2 Years Old	Oedema		#DIV/0!		#DIV/0!	0	#DIV/0!		
	<115 mm		#DIV/0!		#DIV/0!	0	#DIV/0!		
	115-124 mm		#DIV/0!		#DIV/0!	0	#DIV/0!		
	≥125 mm		#DIV/0!		#DIV/0!	0	#DIV/0!		
	Total	0	#DIV/0!	0	#DIV/0!	0	#DIV/0!		#DIV/0!
Total	Oedema	0	#DIV/0!	0	#DIV/0!	0	#DIV/0!	#DIV/0!	
	<115 mm	0	#DIV/0!	0	#DIV/0!	0	#DIV/0!	#DIV/0!	
	115-124 mm	0	#DIV/0!	0	#DIV/0!	0	#DIV/0!	#DIV/0!	
	≥125 mm	0	#DIV/0!	0	#DIV/0!	0	#DIV/0!	#DIV/0!	
	Total	0	#DIV/0!	0	#DIV/0!	0	#DIV/0!	#DIV/0!	

Instructions: Fill in the cells that have a white background (C5-C8, C10-13, E5-8, E10-13). The rest of the cells will be filled in automatically.

** MUAC shows a known bias towards younger children. In a balanced sample we expect approximately two thirds (~66%) of the sample to be over 2 years old. If too few older children are included in the sample use the weighted total. Percentage of children over 2 is shown in the last column.

3. Results

4. Tally sheet 2 Optional

5. Tally sheet PLW



ANNEX 3: IYCF-E Excel Database

Myanmar IYCF-E screening	
Background	
Date(s) of Screening	
Ministry/ NGO/ Agency supporting the assessment	
State/ Province	
District	
Sub-district / Town or Village(s)	
Type of the population screened: (1) only local population, (2) both local and displaced population, (3) only displaced population	
Brief description of the screening setting: (1) door-to-door outreach community screening for referral, (2) screening of all children combined with the vaccination campaign, (3) hospital (4) fixed health center or health post, (5) mobile health team, (6) food or commodity distribution point, (7) other setting -- describe	
If screening at health facility or by mobile health team, indicate whether: (1) only sick children were screened, or (2) healthy children coming for check-up visits or vaccination were screened as well as the sick	
Who measured children?: (1) community volunteers, (2) medical staff (nurses, doctors), (3) other -specify	
Total estimated size of the target population (children 0-23 months) -- for door to door and vaccination campaign screenings only	
Total number of children screened	

+
☰
Title Page ▾
IYCF-E data ▾

ANNEX 4: MUAC Paper Data Collection Form (English version)

NUTRITION SCREENING IN MYANMAR

IDENTIFIER VARIABLES	Screening Date (dd/mm/yy)	State	Township
	Village/Settlement Name		Team/CHW No:

ANTHROPOMETRIC FORM (CHILDREN 6 - 59 MONTHS)

Child ID	Child NAME	Child SEX Female (F) Male (M)	Child BIRTHDATE (DD-MM-YYYY)	Child AGE in MONTHS	Bilateral Pitting Oedema (y or n)	MUAC of child (mm)

ANNEX 5: IYCF-E Paper Data Collection Form (English version)

IDENTIFIER VARIABLES	Screening Date (dd/mm/yy)	State	Township			
	Village/Settlement Name	Team/CHW No:				

Do Not Read Answer Choices to the Respondent Unless Indicated to do so

Infants under 6 months						
1. Was (name) breastfed yesterday during the day or at night? (Y/N/DK)						
2. Did (name) drink any other liquids yesterday during the day or at night? (Y/N/DK)						
3. Did (name) drink infant formula yesterday during the day or at night? (Y/N/DK)						
4. Was (name) fed any solid, semi-solid, or soft food yesterday during the day or at night? (Y/N/DK)						

Children 6-23 months						
5. Now I would like to ask you about everything that (name) ate yesterday during the day or at night. I am interested in foods your child ate whether at home or somewhere else. (Answer can be more than one group, select all that apply) <ul style="list-style-type: none"> (A) Breast Milk (B) Grains, Roots, Tubers, and Plantains examples: Potato, Rice, Corn, Wheat (C) Pulses (Beans, Peas, lentils), Nuts and Seeds examples: Chickpeas, split yellow peas, Peanut, Sunflower seeds, Pumpkin seeds (D) Dairy Products (Milk, Infant formula, Yogurt, Cheese) examples: Milk, yogurt (E) Flesh food (Meat, Fish, Poultry, Organ, Meats) examples: Chicken, Beef, Fish (F) Eggs (G) Vitamin-A rich fruits and vegetables examples: Carrots, Papaya, Pumpkin (H) Other fruits and vegetables examples : Watergrass, Lady finger, Eggplant, Banana, Watermelon 						