Fighting Hunger Worldwide

National Guidelines on the Management of Moderate Acute Malnutrition for Children under Five Years

Manual of Operations

First Edition 2016

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF HEALTH

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ACRONYMS

BHS	Barangay Health Station
BHW	Barangay Health Worker
BNS	Barangay Nutrition Scholar
BSFP	Blanketed Supplementary Feeding Program
CHT	Community Health Teams
CMAM	Community-Based Management of Acute Malnutrition
CTC	Community Therapeutic Care
DHMT	District Health Management Team
DOH	Department of Health
DALY	Disability-Adjusted Life Year
DSWD	Department of Social Welfare and Development
ENA	Essential Nutrition Action
ENN	Emergency Nutrition Network
EPI	Expanded Program of Immunization
FDA	Food and Drug Administration
FNRI	Food and Nutrition Research Institute
FANTA	Food and Nutrition Technical Assistance
G6PD	Glucose-6-Phosphate Dehydrogenase Deficiency
GAM	Global Acute Malnutrition
GFD	General Food Distribution
GIDA	Geographically Isolated and Disadvantaged Area
GNC	Global Nutrition Cluster
GP	*Garantisadong Pambata*
HC	Health Center
IEC	Information, Education, and Communication
IFE	Infant Feeding during Emergency
IYCF	Infant and Young Child Feeding
IMAM	Integrated Management of Acute Malnutrition
IMCI	Integrated Management of Childhood Illness
IPF	In-Patient Facility
ITC	Inpatient Therapeutic Care
IU	International Units
IUGR	Intrauterine Growth Restriction
LMICs	Low and Middle Income Countries
MAM	Moderate Acute Malnutrition
MCH	Maternal and Child Health
MHO	Municipal Health Officer

MNAO	Municipal Nutrition Action Officer
MUAC	Mid-Upper Arm Circumference
NAOs	Nutrition Action Officers
NiE	Nutrition in Emergency
NNC	National Nutrition Council
NNS	National Nutrition Survey
OPD	Out-Patient Department
OTC	Outpatient Therapeutic Care
PPAN	Philippine Plan of Action for Nutrition
PHN	Public Health Nurse
PIMAM	Philippine Integrated Management of Acute Malnutrition
RHM	Rural Health Midwife
RHU	Rural Health Unit
RUSF	Ready-to-Use Supplementary Food
SAM	Severe Acute Malnutrition
SFC	Supplementary Feeding Center
SFP	Supplementary Feeding Program
TB	Tuberculosis
TSFP	Targeted Supplementary Feeding Program
UNICEF	United Nations Child's Fund
WFL/H	Weight-for-Length/Height
WFP	World Food Programme
WHO	World Health Organization

FOREWORD

The Department of Health recognizes the persistent effects of undernutrition among the Filipino young children. The 2015 National Nutrition Survey showed a significant increase in the prevalence of both chronic malnutrition (stunting) at 33.4% and underweight at 21.5% among children 0-5 years old. Meanwhile, the prevalence of acute malnutrition (wasting) has barely decreased to 7.1% and nearly a million of them are suffering from it in the country.

Moderate Acute Malnutrition (MAM), or moderate wasting, increases the risk of health and nutrition deterioration in infants and young children with recurring calamities and emergencies. MAM eventually develops into SAM (Severely Acute Malnutrition) or severe wasting if unmanaged. Acute malnutrition in general prevents normal gains in body weight, delays the chemical malnutrition of the body, hampers immunity and is associated with an increased risk of morbidity and mortality by 35-45% in the long run, it results to overall poor individual productivity and economic gains. Yet, acute malnutrition is preventable and reversible, but only when sufficient support is accessible and given at the right time during calamities and even in normal situations.

The Department of Health, together with the World Food Programme, development partners, relevant stakeholders and consultants have converged efforts in coming up with **National Guidelines on the Management of Moderate Acute Malnutrition for Children under Five Years** Manual of Operations. This set of guidelines will complete the "Acute Malnutrition Package", preceded by the release of DOH Administrative Order 2015-0055-National Guidelines on Management of Acute Malnutrition for Children under five years and the Guidelines for the Management of Severe Acute Malnutrition (SAM) Manual of Operations.

We are hopeful that through these guidelines, program managers and frontline health and nutrition workers can efficiently implement nutrition interventions to abate childhood acute malnutrition. This is alongside the well-established interventions, such as exclusive breastfeeding for infants under 6 months, followed by provision of complementary foods with continued breastfeeding for children aged 6-24 months; expanding access to high quality and fortified foods, quality health care, improved water sources, and sanitation facilities; micronutrient supplementation for vulnerable children; and better knowledge and maternal and child practices.

On behalf of the Department of Health, I wish to thank all the stakeholders and partners who contributed to the development of these MAM guidelines. Let us continue working together for the vision **"All for Health Towards Health for All"**.

PAULYN JEAN B. ROSELL-UBIAL, MD, MPH, CESO II
Secretary of Health

MESSAGE

Acute malnutrition or wasting is associated with increased risk of disease and death for children, in addition to growth retardation and impaired psychosocial and cognitive development. Based on the latest national nutrition survey, 7.1% of children under-five have wasting. Among infants 0-5 months and 6-11 months, wasting is much higher at 10.9% and 11.6% respectively. Wasting not only affects the poorest and the poor but also the middle-income and rich households. Wasting prevalence has not changed much in more than 3 decades.

The National Nutrition Council is therefore pleased with the development of the Manual of Operations of the **National Guidelines on the Management of Moderate Acute Malnutrition for Children under Five Years.** These Guidelines on Moderate Acute Malnutrition complements the National Guidelines on the Management of Severe Acute Malnutrition issued by the Department of Health through Administrative Order 2015-0055. These two guidelines would now comprise the protocol for treatment of acute malnutrition.

The NNC encourages the use of this manual by local government units, non-government organizations and other stakeholders working to address acute malnutrition or wasting. Government cannot do it alone but needs the help of all – parents, care providers, health professionals and communities. While these guidelines are on the treatment of acute malnutrition, prevention is still best. We encourage local government units especially Barangay Nutrition Scholars to cover all children in their regular growth monitoring activities to prevent early growth faltering and early identification of children with acute malnutrition for immediate referral.

The management of acute malnutrition is one of the cost-effective interventions and is one of the key nutrition-specific programs of the Philippine Plan of Action for Nutrition (PPAN) for 2017-2022. Together with the treatment of acute malnutrition, we encourage all stakeholders to take part in delivering nutrition and related services in order to end all forms of malnutrition in the country.

We acknowledge the Technical Working Group on Community-based Management of Acute Malnutrition for the expertise and effort in coming up with the guidelines. The NNC is pleased to have taken part in the development of these guidelines.

MARIA-BERNARDITA T. FLORES, CESO II
Assistant Secretary of Health
Executive Director IV, National Nutrition Council

MESSAGE

Children are the hope for our future. They are crucial in deciding how the world is going to be over the next few decades. Doing something good in the life of a child today will create a positive change for the future. We can start off by providing good nutrition. Good nutrition is the foundation of a child's life but knowing that undernutrition in both mother and child is still a global issue that results in 35-45% of deaths among children under five, it is imperative to take action right now.

One form of undernutrition crippling our children is acute malnutrition. It results from disease; nutritious food consumption at inadequate levels and at insufficient quantities; improper maternal and child-care and feeding practices; as well as lack of access to basic social services, often aggravated by calamities, natural and man-made alike. Without the necessary responses to address these causes, acute malnutrition eventually leads to child mortality. Unfortunately, even if a child survives without external intervention, he/she becomes sickly or chronically malnourished, contributing to the stagnation of the Philippines' growth and development.

As a signatory to the Scaling Up Nutrition (SUN) global movement, and as part of its commitment to the achievement of the Sustainable Development Goals – particularly on Zero Hunger (SDG#2) - the Philippines has taken major steps in addressing acute malnutrition among children under five. Through this manual **"The Management of Moderate Acute Malnutrition"** with technical support from WFP and together with the Manual on the Management of Severe Acute Malnutrition, the package of interventions for Filipino children during both calamities and normal time is comprehensive.

Congratulations to the Department of Health (DOH), the National Nutrition Council, the United Nations Country Team, the CMAM technical working group led by the DOH's Health's Children's Health Development Division of the Disease Prevention and Control Bureau, the consultants of the manual and the personnel of Local Government Units in making this initiative a reality.

PRAVEEN AGRAWAL
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INTRODUCTION

Global acute malnutrition or global wasting is a major underlying cause of death and illness, affecting about 52 million (8%) children under five worldwide, with relatively more prevalence in low-income to middle-income countries.

A staggering 3.1 million (45%) of young lives are lost each year due to child undernutrition, making it the single greatest threat to their survival. It encompasses stunting, wasting, vitamin A and zinc deficiency, fetal growth restriction and suboptimum breastfeeding (Black, et al., 2013). The Lancet Series on maternal and child undernutrition (2013) reports that children with moderate wasting or moderate acute malnutrition (MAM) have thrice (3x) the risk of dying than well-nourished children under five. Although severe wasting or severe acute malnutrition (SAM) has a higher immediate risk of mortality in the individual level, which is nine times than normal, the number of deaths in children affected by MAM is much greater (10.2%), thus having a higher absolute mortality than SAM with 4.4% (Black, et al., 2008). In relation to SAM, addressing MAM especially in developing countries, most especially in low and low-middle income countries, can help in preventing more SAM cases to progress and for child mortality to decrease.

OBJECTIVES AND USE OF THE GUIDELINES

The purpose in formulating these guidelines is to establish the management of Moderate Acute Malnutrition (MAM), both by prevention at the early onset or treatment of nearly severe cases, among children in the Philippines from 6–59 months of age.

The end goal of these guidelines is to have a sustained implementation of services for the management of MAM as component within the context of Community-Based Management of Acute Malnutrition (CMAM). To achieve this goal, the following are considered:

- A harmonized approach in the diagnosis and treatment that is in line with the latest global evidence;
- A national set of guidelines for nationwide implementation of MAM programs in normal situations and in times of emergencies;
- Well-integration of MAM guidelines with other established public health and nutrition services and interventions to prevent all forms of malnutrition:
  (early initiation of breastfeeding; exclusive breastfeeding for infants under 6 months; continued breastfeeding with complementary feeding for children aged 6–24 months; expanded access to high quality foods and fortified foods, quality health care, improved water sources and sanitation facilities; micronutrient supplementation for vulnerable children; better knowledge of caring practices for development; growth monitoring; Expanded Program of Immunization (EPI); management of childhood illnesses; maternal nutrition, etc.)
- Operationalization and scale up

These guidelines are primarily intended for community service workers such as the Barangay Nutrition Scholars (BNS), Barangay Health Workers (BHW), and the Community Health Team (CHT); social welfare and day care workers; nutritionist-dietitians; health care providers (doctors, nurses, and midwives); Nutrition Action Officers (NAOs) to help implement nutrition interventions; Health Facility Managers, and Parent Leaders (of DSWD's Pantawid Pamilyang Pilipino Program-4Ps who can also be BHW and BNS). It is also integral that private clinics and institutions, as well as professional organizations (e.g. Philippine Pediatric Society), are encouraged to participate.

These guidelines are also particularly important for Health Program managers or coordinators, Local Health Boards, and nutrition committees at all levels as a guide for planning nutrition programs in emergency, recovery and development settings.

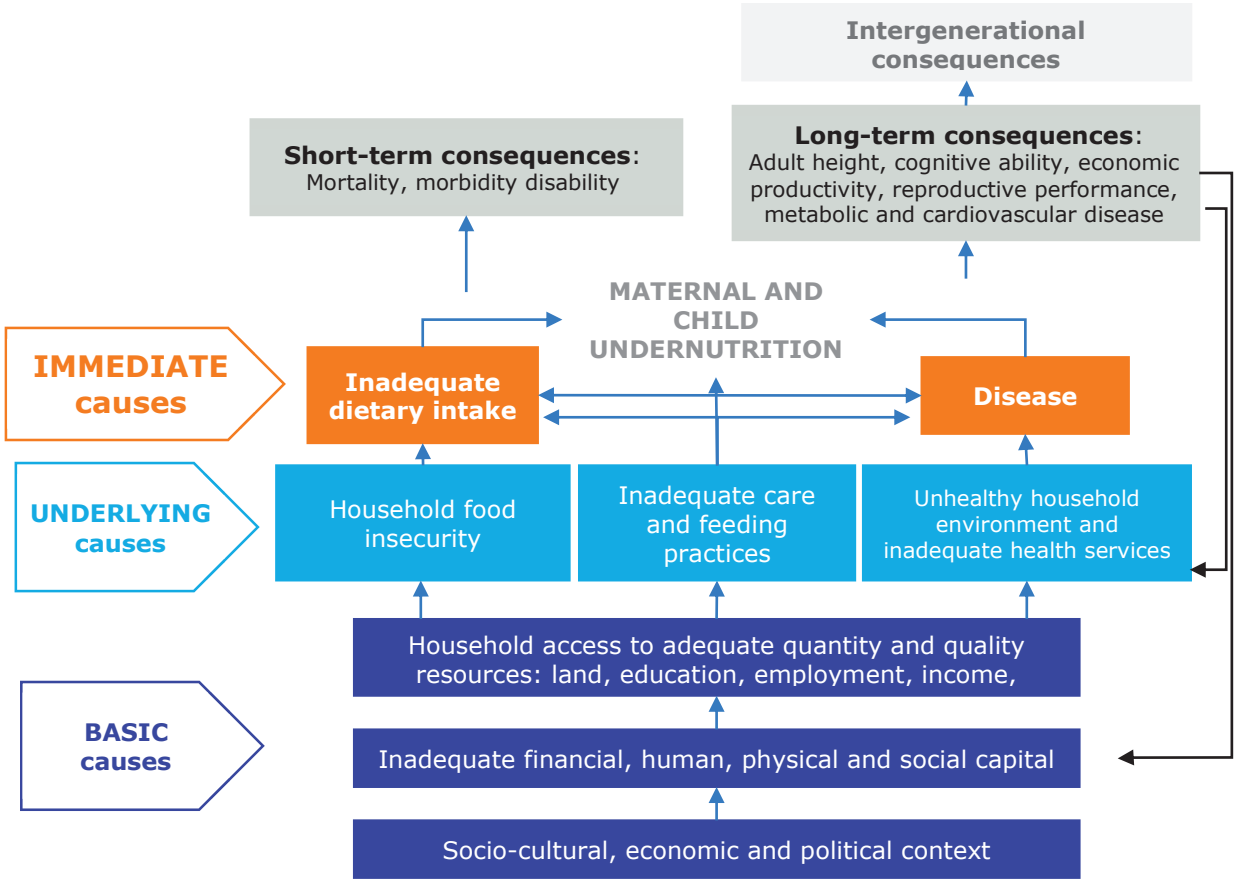
These guidelines can be an instrument for the academe to enhance the curriculum of health and nutrition service providers in the pre-service level and during their community work. This is also for other stakeholders, foreign and local, to serve as basis for sharing their resources; and in the implementation of activities such as advocacy, capability-building, budget allocation, policy-making, research and other undertakings as well.

The general structure of these guidelines includes an introduction to the concept of CMAM and PIMAM in light of management of MAM as this program is being implemented in the Philippine setting. It has two parts: the first discusses the technical aspect and while second the operational part of the implementation.

ACUTE MALNUTRITION

Causes and Definitions

On a larger scale of things, we define **malnutrition**, which is more encompassing, as a form of physiological impairment related to the body's use of nutrients, and can be classified as either undernutrition or overnutrition. **Undernutrition**, on the other hand, covers both short-term (acute) or long-term (chronic) situations. It includes several physiological conditions in children under five years old such as wasting (low weight-for-height/length) and nutritional edema (a manifestation of severe malnutrition); stunting (chronic malnutrition with low height/length-for-age); intrauterine growth restriction (IUGR) which leads to low birth weight; and deficiencies in essential micronutrients (DG ECHO, 2013).



(UNICEF, 2013)

Figure 1. Framework for the determinants of child undernutrition

Undernutrition can lead to reduced human and social capital over the lifespan of affected populations, thereby perpetuating undernutrition across generations, as seen in UNICEF's conceptual framework for the basic, underlying and intermediate causes of child malnutrition, mortality and morbidity (Figure 1). This general framework also supports in conceptualizing the reasons why children might develop acute malnutrition.

Acute malnutrition is a condition that generally results from recent rapid loss of weight or a failure to gain weight due to illness, reduced food intake, inappropriate childcare practices or combinations of these. The degree of acute malnutrition is classified as either moderate or severe based on

anthropometric and clinical measures. Children with acute malnutrition can be described as manifesting kwashiorkor (edema), marasmus (thinness), or both, depending on the severity. Nutritional edema is the swelling due to excessive retention of fluid in the body.

The focus in emergencies is acute malnutrition because of its link with increased risk of mortality. Children with MAM have increased vulnerability to infections as well as the risk of developing SAM, which is immediately life-threatening. Acute malnutrition is often used to assess the severity of an emergency because it is caused by illness and/or sudden, severe lack of food and is strongly related to mortality (WFP, Hunger Glossary, 2016). It can also be seen as an early warning for future increases in chronic malnutrition. However, this can be reversed with appropriate treatment (DOH, 2015).

Table 1. Criteria for classifying degree of acute malnutrition in infants and young children 6 to 59 months

Tool	MAM	SAM
MUAC	≥ 115mm (11.5cm) to < 125mm (12.5cm)	< 115mm (11.5cm)
WFL/H	-3 Z-score to < -2 Z-score	< -3 Z-score
Bilateral pitting edema	absent (-)	absent (-)/present (+)

**adapted from WHO Standards and CMAM Training Modules*

Moderate Acute Malnutrition (MAM) or **Moderate Wasting**, as a classification of acute malnutrition, is defined by low weight-for-length/height (WFL/H) between negative 3 (- 3) and less than negative 2 (< - 2 Z-scores) of the standard deviation of the WHO child growth standards, just below the normal range, and without edema. In addition, MAM can be identified with low Mid-Upper Arm Circumference (MUAC) measurement of ≥115mm and <125mm (≥11.5cm and <12.5cm). Approximately more than 30 million children under five meet these criteria worldwide. Mid-Upper Arm Circumference is used for rapid screening and admission tool for potential cases, and more widely used at the community level because it is easier to use and is more portable. Weight for Length or Height (WFL/H) measurement shows how a child's weight compares to the weight of a child of the same length/height and sex in the WHO standards.

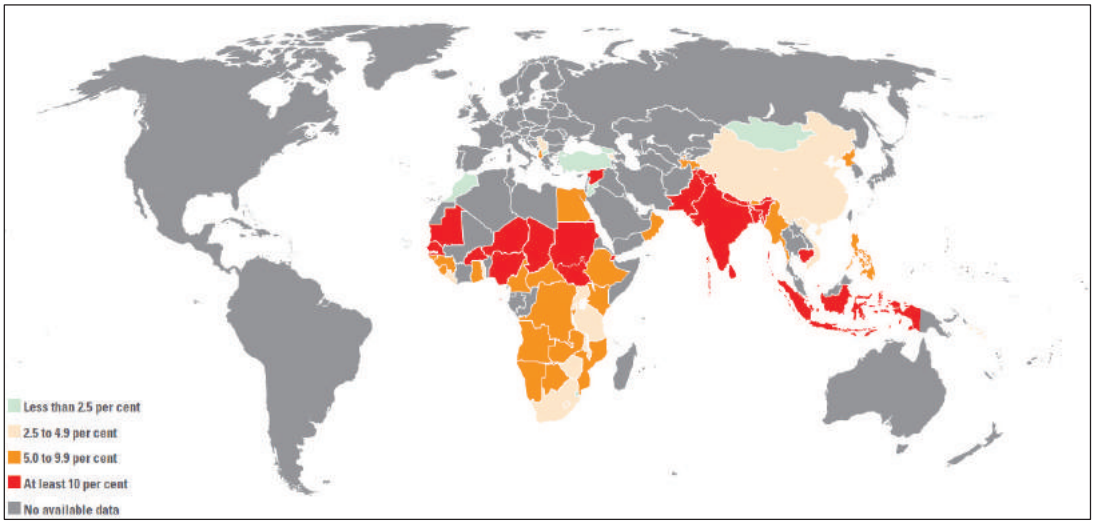
Burden of Acute Malnutrition

According to the 2013 World Health Statistics report, out of the total of 52 million under five children worldwide classified as having acute malnutrition in 2012, 33 million had MAM. MAM affects roughly one in ten children under-five years of age in the least developed countries, 70% of them are reportedly living in Asia (Black, et al., 2008).

The 2008 Lancet Series on maternal and child undernutrition also underscored the burden of nutritional conditions in low to middle income countries (LMICs). Undernutrition is a preventable condition; however, it has become the underlying cause of over a third of deaths among under-five children worldwide. Stunting, severe wasting, and IUGR are estimated to be responsible for 21% of disability-adjusted life years (DALY) lost. Undernutrition also causes suboptimal physical and cognitive development, lower resistance to infections and hindered productivity.

In the Philippines, as reported by the Department of Science and Technology's Food and Nutrition Research Institute in the recent National Nutrition Summit (DOST-FNRI, 2016), it was shown that the prevalence of global acute malnutrition (GAM) or global wasting in 2015 among infants and young children under five was at 7.1 %, which was a decline from the consistently upward trend from 2005 (5.8 %), 2008 (6.9%), 2011 (7.3 %), and 2013 (7.9 %). The map in Figure 2 indicates where the Philippines is in the status of acute malnutrition worldwide. The highest incidences within

this population are among children below 6 months (10.9 %), children 6-11 months (11.6 %) and children 12 to 23 months (9.2 %). Approximately, a million children aged 0-5 years are affected by acute malnutrition and more than 700,000 are suffering from moderate acute malnutrition.



**the Philippines is indicated with yellow mark, GAM between 5.0%-9.9%* (UNICEF, 2013)

Figure 2. Percentage of acutely malnourished under five children

The underweight prevalence among infants and young children under five has reached 21.5 % in 2015, a considerable increase from 19.9 % in 2013 and 20.2% in 2011. This reflects a relatively unchanged status for the past 10 years – from 20.7% in 2003, to 20.0% in 2005, and 20.7% in 2008 – which made the Philippines unable to achieve the MDG Target of a 50% reduction in underweight prevalence from the baseline of 27.3% in 1989. Children nearing their fifth year (48-59 months) had the highest prevalence in underweight with 24.7 % among infants and children under five.

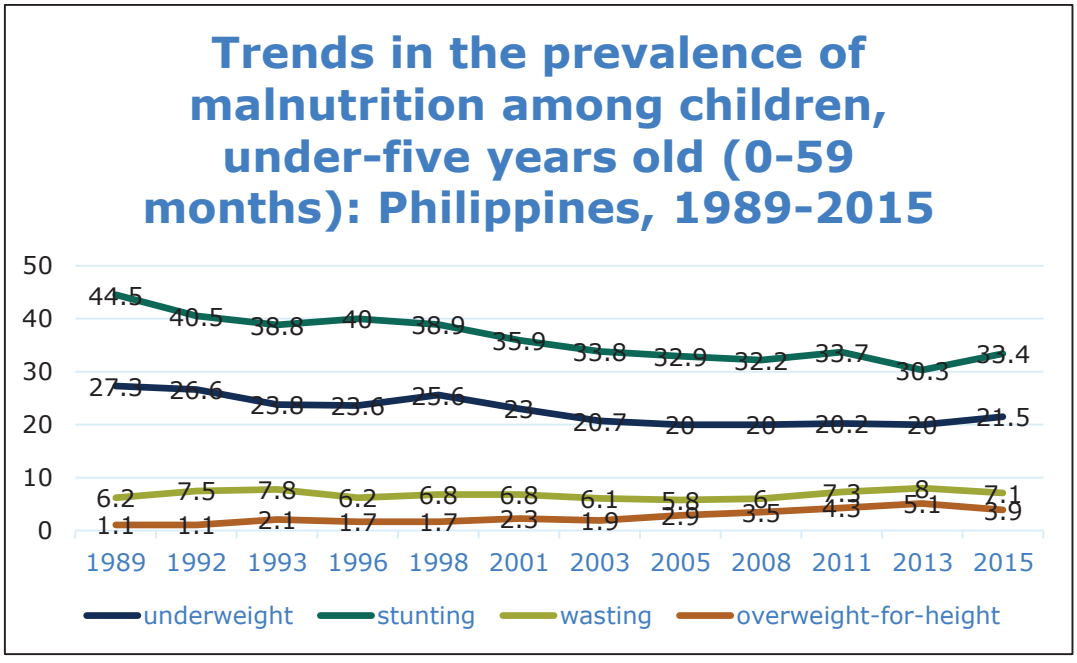


Figure 3 Undernutrition prevalence rate among infants and children below five in the Philippines from 1989 to 2015

Stunting among children under five has gone down to 30.3% in 2013, from 33.6% in 2011 and 32.4% in 2008, which is a substantial drop from 2003 data. However, it resumed its increasing trend and has reached 33.4% in 2015 and is considered "high", according to WHO classification.

Stunted height is more manifested among children three to four years of age (36-47 months), 38.6%.

Overweight among children under five has been consistently rising from 3.3% in 2008, to 4.3% in 2011 and to 5.0% in 2013, but has decreased to 3.9% in the recent 2015 report. The highest incidence of overweight is among children younger than 6 months (6.9%), followed by 6- to 11-month-olds (4.2%).

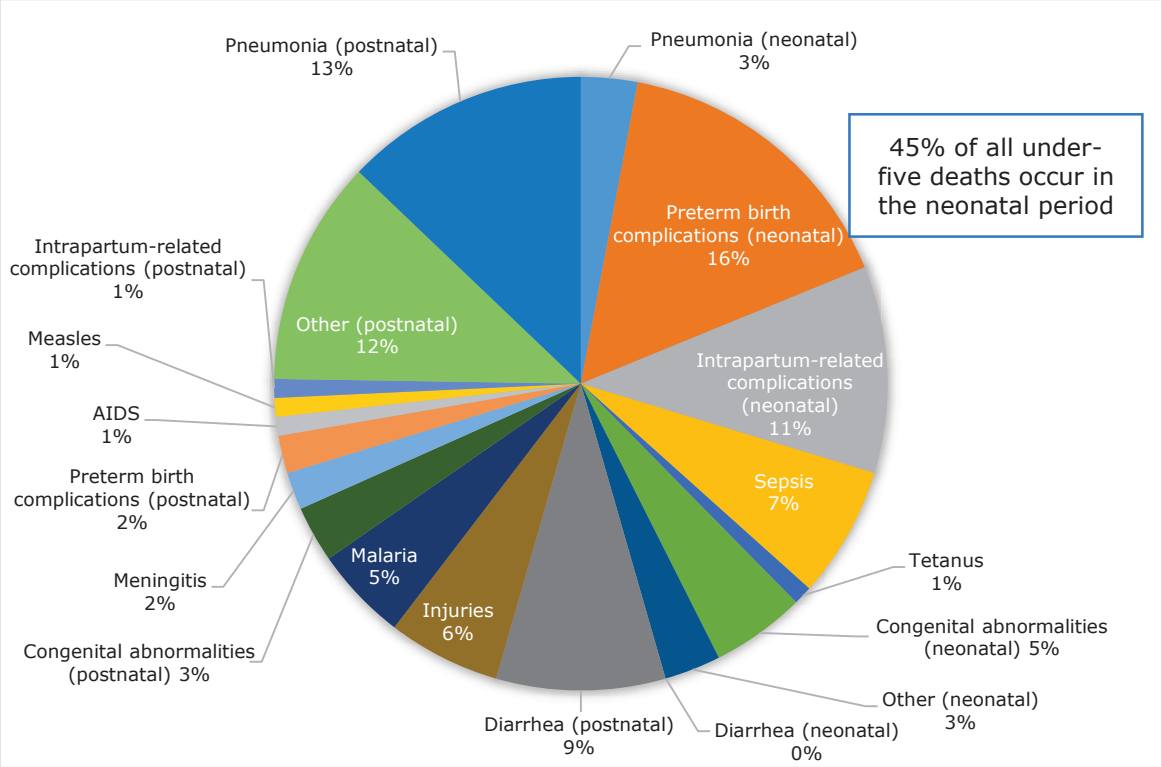
Table 2. Regional prevalence of malnutrition with the highest and lowest ratings

	Region with highest rating	Rate of Malnutrition	Region with lowest rating	Rate of Malnutrition
Wasting	MIMAROPA Eastern Visayas ARMM & Bicol	9.7% 8.4% 8.2%	Northern Mindanao CAR Davao	4.0% 4.5% 6.3%
Stunting	ARMM Eastern Visayas MIMAROPA	45.2% 41.7% 40.9%	Central Luzon NCR CALABARZON	23.1% 24.9% 27.7%
Underweight	MIMAROPA Eastern Visayas Bicol	31.8% 29.5% 28.4%	NCR Central Luzon CAR	15.1% 16.6% 16.8%
Overweight	NCR/Central Luzon CALABARZON ARMM	6.0% 5.0% 4.2%	CARAGA Northern Mindanao Eastern Visayas	1.7% 2.0% 2.3%

(DOST-FNRI, 2016 National Nutrition Summit)

The DOST-FNRI also noted regional variations in terms of percentage of wasting, underweight, stunting and overweight in infants and young children under five years of age (see Table 2). The lowest rates of malnutrition are generally found in the more developed urban regions. Wasting, stunting and underweight are scarcest in NCR, Central Luzon, CAR, Davao, CALABARZON and Northern Mindanao. The rate of overweight, however, is more prevalent in these regions. On the other hand, the highest prevalence of underweight, stunting and wasting is more apparent among those in the rural areas and in the poorest quintile. Among the regions, the highest rankings in wasting, stunting and underweight are interchanging among MIMAROPA, Eastern Visayas, ARMM and Bicol regions; while overweight is prevalent in NCR, Central Luzon, CALABARZON and ARMM. (See Annex 1 for Regional charts on the status of stunting, wasting and underweight in the Philippines.)

From these results of the report, it was concluded that malnutrition has remained a public health issue because there is either slow improvement or the degrees of undernutrition continue to be prevalent in the country, especially among children. Thus, it shows that the current nutritional status of children in the Philippines is considered poor based on the WHO cut-off points in determining the magnitude and severity of wasting in children.



(UNICEF, 2015)

Figure 4 Global distribution of deaths among infants and young children under five

The severity of malnutrition in children can be associated with increased risk of all-cause mortality and an increased risk of death from diarrhea, pneumonia, measles, and other infectious diseases (Black, et al., 2013).

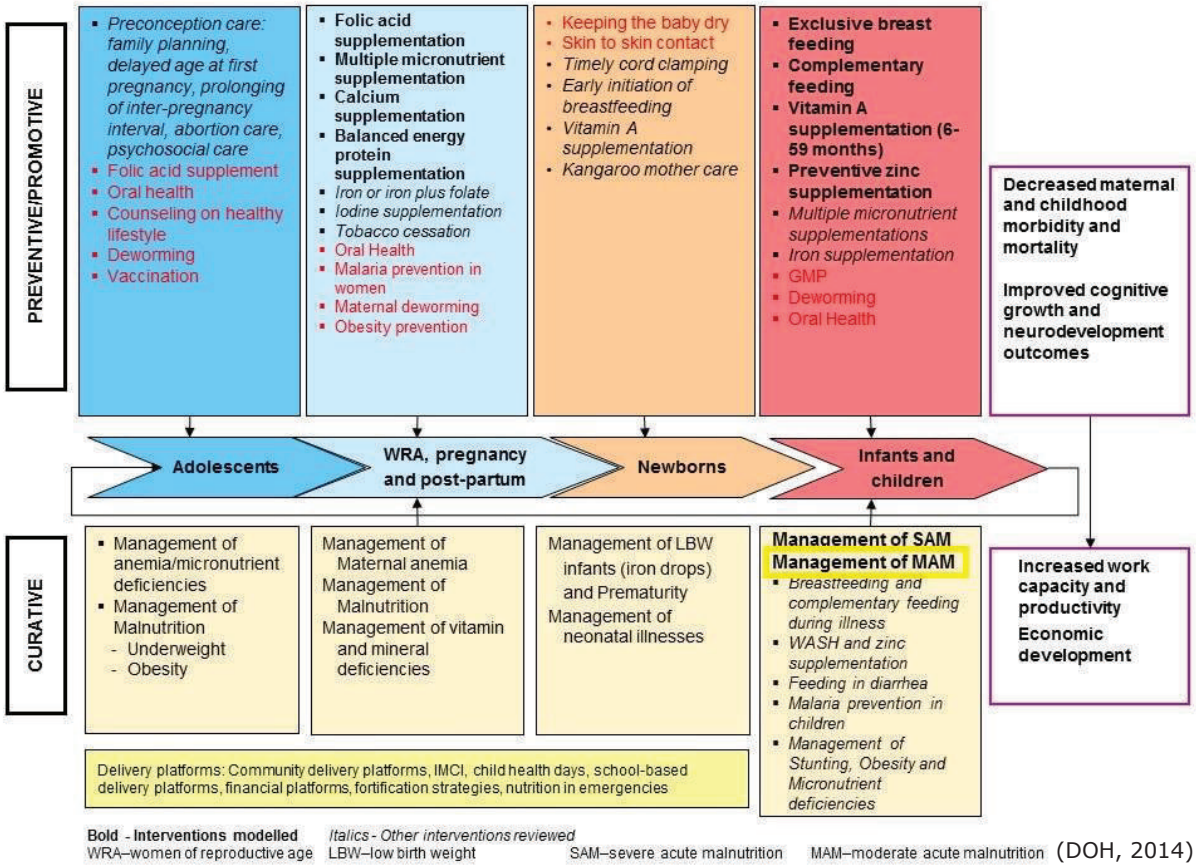
Nearly half of all deaths of under-five children can be attributed to undernutrition (Figure 4). The vicious cycle of malnutrition significantly describes the relationship between undernutrition and illnesses. The cycle may begin with infection such as diarrhea or pneumonia that will progress in the undernourishment of the child. Conversely, undernourishment increases the susceptibility of a child to extended illnesses and complications, which may lead ultimately to death.

There is a positive correlation between the degree of wasting and an increased risk of death (Black, et al., 2013). Therefore, management of acute malnutrition aims to prevent the progression of MAM to SAM with proper dietary treatment using locally available food sources with the sufficient amount of nutrients to supplement the needs of a MAM child or lipid-based Ready-to-Use Supplementary Food (RUSF). RUSF contains proper amount of nutrients and energy needed by children of this age range and nutrition status. It is consumed in addition to continued breastfeeding and other family food, for a duration of about three months.

Management of SAM is strongly-linked with medical screening and services. In developing countries such as the Philippines, there exist already an overstretched health systems. By reaching children before they develop SAM, the management of MAM can help ease this burden. If there are no programs to address MAM in emergencies or normal circumstances, the prevalence of SAM often increases, which puts additional strain to available health system or programs that manage SAM (WFP, 2012). Thus, the importance of addressing MAM cases before they deteriorate into more severe cases and/or coexist with medical complications.

BACKGROUND AND RATIONALE

In 2008 and 2013, the LANCET issued a series of medical journals on maternal and child nutrition, highlighting the importance of addressing malnutrition within the "window of opportunity" or the first 1000 days of the child, from conception to just before she turns 2 years old, to reduce child mortality and to avert irreversible long term effects on health and on cognitive and physical development of the child. In response, the World Health Organization, through the 65th World Health Assembly in 2012, identified and endorsed a set of global targets for 2025 to reduce the unacceptably high burden of disease and deaths caused by poor nutrition. This became the start of the SUN (Scaling-Up Nutrition) Movement with 56 current participating countries, including the Philippines. Management of MAM gives focus on the 6th and last target: to reduce and maintain childhood wasting to less than 5%. By participating in the SUN Movement, countries establish programs and policies that implement nutrition-sensitive strategies and specific actions for nutrition, one of which is the access to effective treatment of people with SAM or MAM. (See Annex 2 for Global Targets to improve maternal, infant and young child nutrition)



(DOH, 2014)

Figure 5 Nutrition interventions for mothers and children across the lifecycle

Many nutrition interventions have been successfully implemented at scale, and the evidence base for the effectiveness of these interventions and delivery strategies have grown. The LANCET mentioned 10 nutrition-specific interventions across the life stages to address undernutrition and micronutrient deficiencies (Figure 5).

The management of MAM is also anchored in realizing Goal Number 2 of the UN's Sustainable Development Goals (SDG), which is to end hunger, achieve food security and improved nutrition,

and promote sustainable agriculture by 2030. Specifically, by that year, all forms of malnutrition are terminated, and that by 2025, the agreed targets for children under 5 years of age are achieved: decrease wasting by less than 5%, stunting by 40%, and zero increase in overweight, as well as increase exclusive breastfeeding by at least 50%, and decrease anemia in women of reproductive age by 50% (WHO, 2012).

Community-based Management of Acute Malnutrition (CMAM) then evolved from Community-based Therapeutic Care (CTC) that manages acute malnutrition in emergency settings. This innovative approach of CMAM engages the communities to identify acutely malnourished children before their condition deteriorates to medical complications.

CMAM had its first pilot implementation in Ethiopia in 2001, which demonstrated effectiveness of the approach in terms of reducing mortality in children with acute malnutrition. Based on these early successes, it was adopted in the countries in Africa, and in Pakistan and Afghanistan since 2003. In 2007, it was endorsed with a joint statement of WHO, UNICEF, United Nations Standing Committee on Nutrition (UNSCN), and WFP, enabling the governments to start establishing and scaling up CMAM programming at the national level. In 2008, it was introduced in the Philippines through the Nutrition in Emergencies (NiE) interventions in disaster-affected communities with infants and young children under five as beneficiaries. In 2009, Save the Children, Doctors Without Borders (MSF) and Community and Family Services International (CFSI) first implemented it in armed conflict-affected municipalities of Maguindanao, North Cotabato, Lanao del Sur and Lanao del Norte, with support from UNICEF and WFP. In 2010, ACF-International applied it for development interventions in municipalities of North Cotabato and Lanao del Sur.

In 2012, WFP partnered with Save the Children (SC) to implement Moderate Acute Malnutrition Management Partnership for the Implementation, Localization and Technology Transfer (MAMM PILOT) Project using MAM treatment guidelines. The project was designed to compare the following modalities: a) MAM treatment using RUSF and nutrition education using the Positive Deviance (PD)/Hearth approach; b) MAM treatment using RUSF only; and c) nutrition education using the PD/Hearth approach only. It was implemented through DOH Regional Office 12 (SOCCSKSARGEN) and the DOH-Autonomous Region for Muslim Mindanao (DOH-ARMM), Integrated Provincial Health Offices (IPHOs) and the local government units (LGUs). Community mobilization, capacity-building, and advocacy activities were instigated. The MAMM PILOT project was implemented in four municipalities of North Cotabato in Region 12 and four municipalities in Maguindanao in ARMM in collaboration with the Provincial and Municipal Nutrition Committees. The Operations Research result showed that children with MAM gained weight maximally when they were given RUSF coupled with behavioural change activities on feeding, hygiene, child care, health seeking and food security using the community-based Positive Deviance/-Hearth approach. Minimal weight gain was also noted in the group given RUSF only, and the group who received supplementary feeding using locally available food items and nutrition education only.

NGOs have since been implementing CMAM in the country for emergencies that affect nutritional status of children, especially those who are marginalized or vulnerable. Professor Michael Golden and Dr. Yvonne Grellety participated with the DOH and CMAM Task Force of the Philippines to adapt the Integrated Management of Acute Malnutrition (IMAM) guidelines for the Philippines, thus the Philippine Integrated Management of Acute Malnutrition (PIMAM), a national protocol for the management of SAM. To complete the components of CMAM, WFP commissioned Golden and Grellety to draft the MAM treatment guidelines which will be integrated with the PIMAM Guidelines. The authors were able to come up with the draft of Integrated Management of MAM protocol (Golden & Grellety, 2011). The PIMAM draft guidelines have been used by NiE implementers in emergencies since 2011 (e.g. Typhoons *Ondoy, Sendong, Pablo and Haiyan,* Bohol Earthquake and the Zamboanga Siege) while it was awaiting review and final approval from the DOH.

In the most recent development, the Integrated Management of Childhood Illness (IMCI) was updated to also include the management of acute malnutrition (Figure 6). The IMCI is a strategy to reduce under-five mortality, morbidity and disability in developing countries through improving

CHECK FOR ACUTE MALNUTRITION

CHECK FOR ACUTE MALNUTRITION
LOOK AND FEEL:
Look for signs of acute malnutrition
☐ Look for edema of both feet.
☐ Determine WFL/H* _____ Z-scores.
☐ Measure MUAC** _____mm in a child 6 months or older.

If WFL/H less than -3 Z-scores or MUAC less than 115mm, then:
- Check for any medical complication present:
  - Any general danger sign
  - Any severe classification
  - Pneumonia with chest indrawing
- If no medical complications present:
  - Child is 6 months or older, offer RUTF*** to eat.
    Is the child:
    Not able to finish RUTF portion?
    Able to finish RUTF portion?
  - Child is less than 6 months, assess breastfeeding:
    Does the child have a breastfeeding problem?

Classify NUTRITIONAL STATUS

•Edema of both feet O**R** •WFL/H less than -3 Z-scores **OR** MUAC less than 115mm **AND any of the following**: ○Medical complication present; or ○Not able to finish RUTF; or ○Breastfeeding problem	***Pink:*** **COMPLICATED SEVERE ACUTE MALNUTRITION**	☐ **Give first dose of appropriate antibiotic** ☐ **Treat the child to prevent low blood sugar** ☐ **Keep the child warm** ☐ **Refer URGENTLY to hospital**
•WFL/H less than -3 Z-scores **OR** •MUAC less than 115mm **AND** •Able to finish RUTF	***Yellow:*** **UNCOMPLICATED SEVERE ACUTE MALNUTRITION**	☐ **Give oral antibiotics for 5 days** ☐ **Continue breastfeeding** ☐ Give RUTF if available for a child aged 6 months or more ☐ Counsel the mother on how to feed the child ☐ Assess for possible TB infection ☐ Advise mother when to return immediately ☐ Follow-up in 5 days
•WFL/H between -3 and -2 Z-scores **OR** •MUAC 115mm up to 125mm	***Yellow:*** **MODERATE ACUTE MALNUTRITION**	☐ Assess the child's feeding and counsel the mother on the feeding recommendations ☐ If feeding problem, follow-up in 5 days ☐ Assess for possible TB infection ☐ Advise mother when to return immediately ☐ Follow-up in 30 days
•WFL/H -2 Z-scores or more **OR** •MUAC 125mm or more	***Green:*** **NO ACUTE MALNUTRITION**	☐ If child is less than 2 years old, assess the child's feeding and counsel the mother on feeding according to the feeding recommendations ☐ Give micronutrient powder supplement ☐ If feeding problem, follow-up in 5 days

**WFL/H is determined by using the WHO growth standards chart.*
***MUAC is measured using MUAC tape in all children 6 months or older.*
****RUTF is for conducting appetite test and feeding children with severe acute malnutrition.*

(DOH, WHO, UNICEF, 2015)

Figure 6 IMCI assessment for cases of acute malnutrition

case management skills of health workers, strengthening the health system, and addressing family and community practices (WHO, 2014). Also, as part of the Early Warning System (EWS) for disasters, the Surveillance in Post Extreme Emergencies and Disasters (SPEED) includes acute malnutrition as the 21st disease entity or syndromic condition monitored by the system (DOH-HEMS, 2011).

In 2015, the National Guidelines for the Management of SAM: Manual Operations, spearheaded by the Department of Health (DOH) with the technical support from the Nutrition Section of UNICEF Philippines Country Office, was finalized The Philippine government subsequently adopted the guideline. The Administrative Order 2015-0055, which covers the management of both SAM and MAM, was then passed to support the development of the National Guidelines of the Management of Acute Malnutrition for Children Under 5 Years.

The draft of MAM Treatment Guidelines developed by Golden and Grellety, IMCI protocols, the finalized version of the Management of SAM, AO 2015-0055 and other WHO guidelines, as well as the first revision of national guidelines for MAM treatment commissioned by Save the Children and WFP, serve as the basis for this current version of national guidelines for the management of MAM.

The Philippines also made a commitment to achieve the MDGs on nutrition through its PPAN 2011-2016, which aims to contribute to improving the quality of the human resource base of the country and to have substantial decreases in child and maternal and overall disease burden. It upholds that

food and nutrition is a right of every individual. The attainment of nutritional wellbeing is a major responsibility of families but duty bearers like the government organizations and NGOs should help families especially the marginalized, to be able to provide for their own nutritional needs. Among the targets of PPAN by 2016 are to reduce the prevalence of the following: underweight children to 12.7%: stunting to 20.9%; and wasted children to <5.0% (NNC, 2012).

The other relevant Philippine policies and directives considered in the development of these guidelines for management of MAM are the following:

- Administrative Order No. 2015-0055 "National Guidelines on the Management of Acute Malnutrition for Children Under 5 Years"
- Administrative Order No. 2008-0029 "Implementing Health Reforms to Rapidly Reduce Maternal and Neonatal Mortality"
- Executive Order 102, 1999 appointing HEMS as the lead agency for formulating the health sector response to emergencies and disasters
- NDRRMC Circular No. 5 "Institutionalization of the Cluster Approach in the Philippine Disaster Management System"
- Department Memorandum No. 12 s. 2008 as amended designated the DOH as the lead government agency for WASH, Health, Nutrition and Psychosocial services
- NNC Governing Board Resolution No. 1, S. 2009 adopting the National Policy on Nutrition Management in Emergencies and Disasters provides that the nutrition committee of LGUs shall function as the local nutrition cluster and shall be considered a sub-structure of the local disaster coordinating council in emergency management
- RA 7160, 1991 Local Government Code giving autonomy to local government units in managing health programs
- DILG, Memorandum Circular No. 2012-89 adopting the PPAN by the LGUs

The key components of PIMAM are: 1) community mobilization; 2) In-patient Therapeutic Care (ITC) for the treatment of SAM cases with medical complications; 3) Out-patient Therapeutic Care (OTC) for the treatment of SAM cases without medical complications; and 4) management of MAM through targeted supplementary feeding program or TSFP (Figure 7). These components are interlinked with each other.

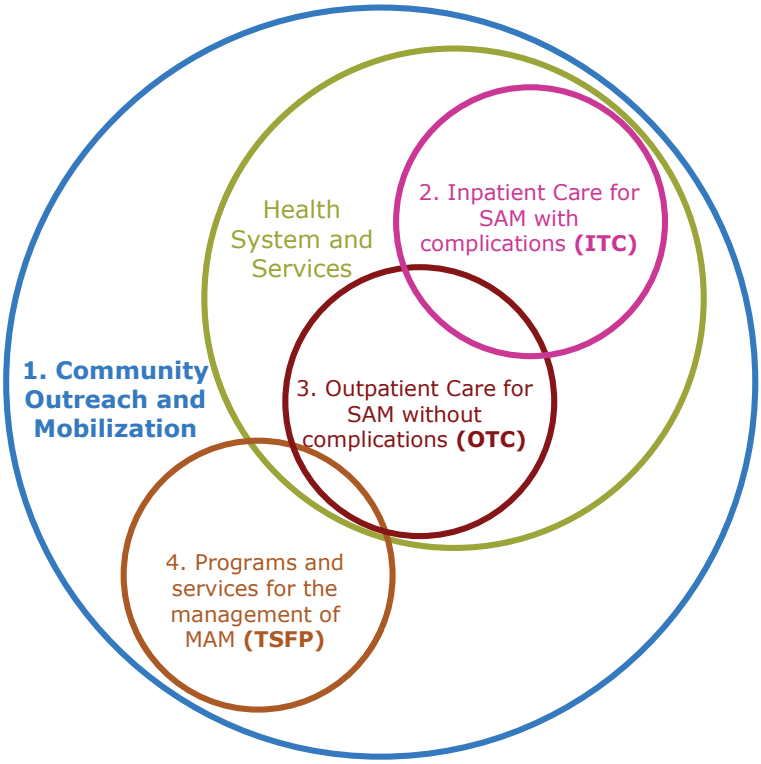


Figure 7 PIMAM Components

Community outreach and mobilization entails promotion of and community involvement in programs combating wasting through the processes of assessment, sensitization, case finding and referral, and case follow-up.

Under the Health System and Services fall the OTC and ITC components both for the management of SAM. SAM cases without medical complications are brought to the **OTC** for weight recovery through the provision of routine medical treatment and nutritional rehabilitation with ready-to-use therapeutic food (RUTF). **ITC** manages the treatment of SAM cases with medical complications in a hospital or health facility with 24-hour care capacity until such condition is stabilized. (Refer to National Guidelines for the Management of SAM)

The last component, which is the focus of this set of guidelines, handles services and programs aimed at addressing MAM through **supplementary feeding** with the distribution of supplementary foods in the form of lipid-based nutrient supplement (LNS) RUSFs or locally available food with the same nutrient contents as that of an RUSF. TSFP specifically caters to children under five who are qualified MAM cases for the improvement of their nutritional status to normal. It also serves as a follow-up venue for cured SAM cases.

PIMAM also has four principles:

- *maximum coverage* – to bring to treatment as many people as possible, with the most affordable and accessible services available;
- *timeliness* – to detect acute malnutrition early and start treatment before the onset of life-threatening conditions;
- *appropriate medical care and nutrition rehabilitation* – to ensure efficiency of programs and services on nutrition, it is important to provide the proper treatment of cases by the proper providers; and
- *care as long as needed* – to reduce barriers to access and ensure that children stay in the program until they recover.

As agreed through a global memorandum of understanding, and adapted by WFP's Nutrition Policy implementation, MAM management, along with the dietary access dimension and expertise on the right food, is supported by WFP, while SAM treatment is supported by UNICEF (WFP, UNICEF, 2011).

The guidelines shall focus on the Management of MAM, but taking into consideration that it is an integral part of the PIMAM, which incorporates SAM and MAM. The internationally accepted recommendation to implement PIMAM is to link the management of MAM with the management of SAM wherever possible. Linkages at the health service and at the community levels are essential in emergencies to take care of the increased numbers of acutely malnourished children. Community sensitization and mobilization, community screening and referral systems are jointly between MAM and SAM programming. Where possible, training and other program aspects should be undertaken jointly. Referral mechanisms between acute malnutrition prevention and management of MAM and SAM activities are very important and should be established as part of the nutrition response. The MAM management guidelines, however, will not include management of SAM (ITC and OTC).

PART 1. TECHNICAL GUIDELINES

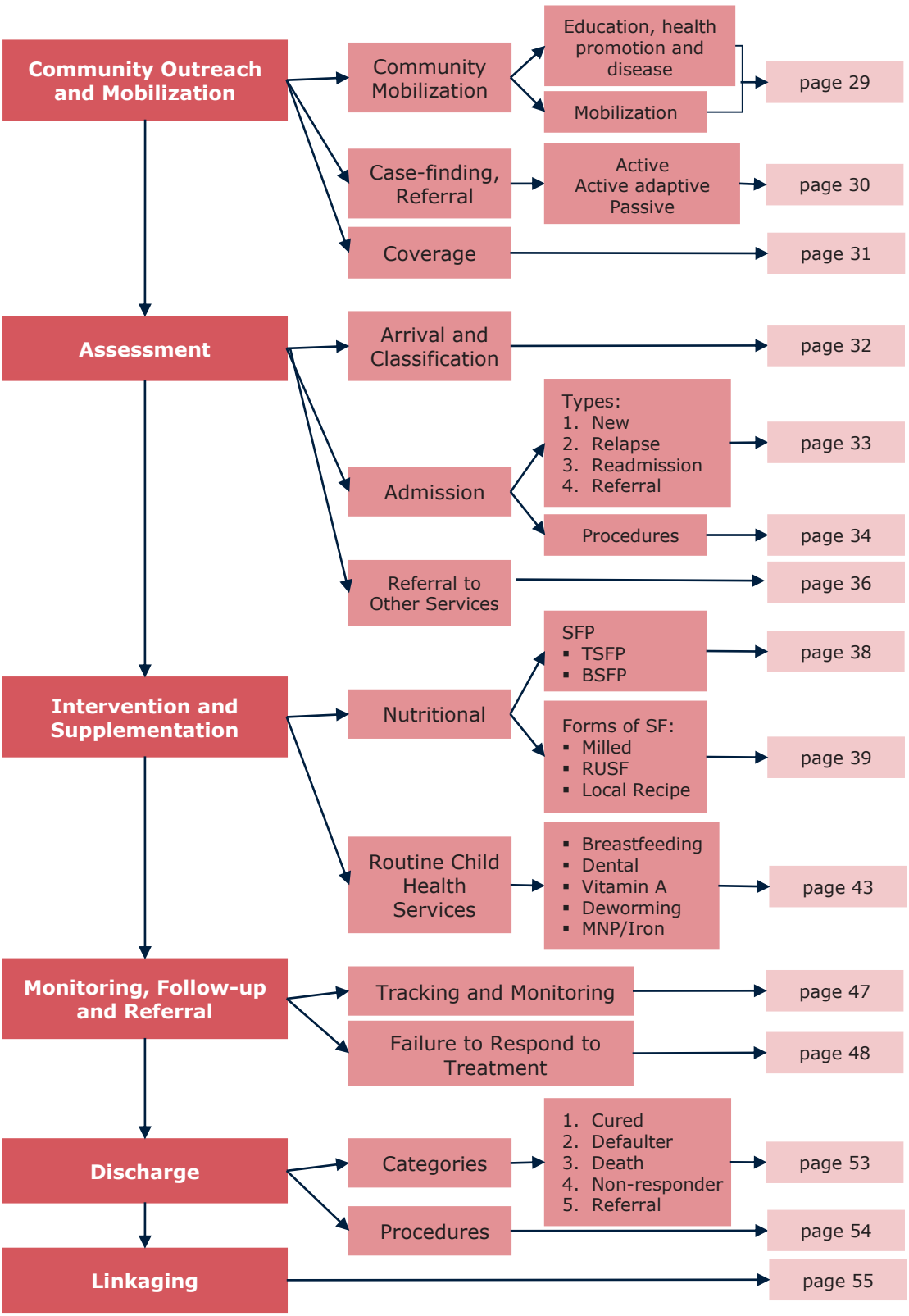


Figure 8 Overview of Specific Guidelines for Management of MAM

This section provides practical guidelines for the identification and management of patients with Moderate Acute Malnutrition (MAM or Moderate Wasting). Moderately acute malnourished children may be treated as outpatients through the Targeted Supplementary Feeding Program (TSFP). The children are at heightened risk of death but, unlike the severely acute malnourished cases, they do not need immediate or emergency treatment.

GENERAL STATEMENTS

1. Case finding may be active, active adaptive, or passive and shall take place in various avenues of child care.
2. All infants and young children 6 to 59 months of age shall be screened/assessed for acute malnutrition or wasting using the MUAC, WFL/H and bilateral pitting edema as indicators to be used as criteria for classifying a child as having SAM (severe wasting), MAM (moderate wasting) or no acute malnutrition (see Section 2 and Annex 4).
   Measuring the MUAC is a quick way of identifying acute malnutrition in infants and young children under five. The child's body weight is assessed in proportion to attained growth in length or height using the WFL/H chart based on WHO Child Growth Standards. A child with edema on both feet should be referred for SAM treatment (refer to the National Guidelines on the Management of SAM).

3. For all children, check if there is a medical complication.
4. TSFP sites shall be identified and equipped for the management of MAM.
5. Other child health interventions, such as IYCF, micronutrient supplementation of ferrous sulphate, vitamin A, and multiple micronutrient powder (MNP), Growth Monitoring and Promotion, deworming, immunization, IMCI, hygiene and sanitation, *Garantisadong Pambata* (GP), Care Practices and Psychosocial Services Services e.g. early childhood care and development (ECCD), and others shall be part of intervention for the management of acute malnutrition.

   When RUSF is not available but only food with energy (510-560 kcal) and protein (11-16 grams) is given, MNP and Vit. A shall be provided. Children on RUSF shall not be given MNP and Vit A, as its micronutrient content is already sufficient.

6. It is important to address IYCF practices as part of intervention for the management of MAM, particularly to emphasize exclusive and continued breastfeeding and optimal complementary feeding in children 6-23 months of age. *Suboptimal breastfeeding has been recognized as a form of malnutrition.*
7. Care practices and psychosocial services are also important in management of acute malnutrition. Children who become malnourished gradually reduce their activity. When a child is fully malnourished s/he becomes lethargic and feeble. Because the child does not cry when hungry, thirsty or distressed, the mother thinks that her child does not need more attention than she is giving; the child is unintentionally neglected. Nurses also neglect children in hospitals for this reason.
8. SFCs and distribution sites should include access to safe drinking water and hand-washing. Sanitary toilets and areas for proper waste disposal should be available in the community. Childhood illness is a contributing cause to acute malnutrition. Early and accelerated management of sanitation, hygiene, water sources, and health programs for common childhood illness (e.g., diarrhea, measles) should complement the management of acute malnutrition during emergency.
9. Monitoring and tracking of registered children are critical for successful management of acute malnutrition.
10. Household food insecurity has a significant impact on the effectiveness of prevention of acute malnutrition and treatment of MAM programs both in an ordinary and emergency situations. Food insecurity or lack of livelihood intervention would less likely prevent nutritional deficiency in an emergency. Resources should be spent on nutrition interventions for prevention of acute

malnutrition or treatment of MAM only when general food distribution or equivalent transfer in cash or voucher is in place.

OBJECTIVES

1. To identify infants and young children with moderate acute malnutrition in the community.
2. To treat moderate acute malnutrition and prevent further deterioration to severe acute malnutrition.

1. COMMUNITY OUTREACH

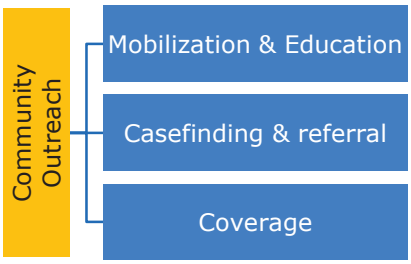


Figure 9 Aspects of Community Outreach

The first integral component of PIMAM, involves community outreach, it involves mobilization and education of the community, case finding, and referral of cases to increase access and coverage of the programs or services for the management of MAM. A strong community outreach corresponds with the principles of timeliness, maximum coverage and providing services as long as the community needs it. The Department of Education (DepEd) also recognizes the importance of nutrition in the well-being and school performance of children, hence the integration of proper nutrition in the basic curriculum. In addition, the Department of Education, together with the Department of Social Welfare and Development (DSWD) implemented the School-Based Feeding Program (SBFP).

Community outreach workers should aim for early identification of cases with MAM before they deteriorate to SAM or having complications, follow-up home visits for problematic cases, educate about acute malnutrition or wasting and promote services that are available in the community, as well as encourage the community to help in case-finding and referring cases to the services. Key stakeholders, such as community health workers and members of the nutrition committees, should also identify and understand social, economic and cultural barriers in the community and be able to discuss these accordingly with involved organizations or government agencies in the implementation of MAM treatment, in order to carry out services smoothly. Not only is community outreach important in identifying cases in the early stage, but it can also contribute in the prevention of acute malnutrition in general when the members of the community are aware of the importance of nutrition for their children.

1.1. Community Mobilization and Education

An important aspect of community outreach is the mobilization and education of the members of the community. Through sensitization, education activities and strategies, and mobilization, the community becomes aware of what constitutes MAM:

- ☐ MAM signs and symptoms
- ☐ how MAM affects their families
- ☐ why it is important to address MAM
- ☐ what available treatment and services for MAM are present in their area
- ☐ who can be treated in these facilities
- ☐ when and where to access services
- ☐ the process of treatment

In addition, educating the community includes health promotion and disease prevention. Mobilization and education can be attained by giving out messages and information, education and communication (IEC) materials to inform community leaders and major stakeholders, by integrating it in the existing activities for nutrition and health, in meetings and gatherings in the community. Information can also be disseminated from children to parent through nutrition education that is integrated in the curriculum set by the DepEd. Parent-Teacher Association (PTA) is a way to educate the community, especially the parents of children under five. Nutrition sensitive programs such as 4Ps Family Development Session (FDS) of DSWD also help in addressing malnutrition by providing social protection (conditional cash transfer) to families in the community.

1.2. Case Finding and Referral

Case finding is also an essential aspect of community outreach to ensure regular screening and early detection of MAM cases among the children under five in the community. Deciding on which method/s to use during outreach the implementers should look into these considerations: prevalence of MAM in the community, level of community awareness, accessibility of homes, existing networks of outreach workers, time and resources available for training outreach workers and the envisioned timeframe for case-finding.

Three Methods of Case-Finding

- **Active** – screening of children *house to house* or in *a defined location*
- **Active-Adaptive** – screening using locally understood and accepted descriptions of acute malnutrition to find cases in households
- **Passive** – screening of children during *health facility* visit

Case finding can be done through any of the following methods:

1. **Active case finding**, outreach workers or community volunteers regularly screen and monitor children so that cases of malnutrition can be identified promptly and treated immediately. This leads to high coverage, faster rehabilitation and lower mortality rates. There are two types of active case finding.
   - *House-to-house case finding* happens when outreach workers periodically perform health checks (edema and MUAC) in the homes of target community members. This can be necessary during start up of the program to ensure that members in the outskirts of the community are not overlooked and that all families are aware of the program.
   - *Community case finding* involves bringing children from different households together in a certain part of the neighborhood to perform health checks. This may be done along with pre-existing nutrition outreach services such as OPT Plus, maternal and child health (MCH) services, or growth monitoring and promotion sessions.

Table 3. Case-finding criteria

Measure	Normal Range	MAM Range	SAM Range
MUAC	≥ 125 mm	115mm to < 125mm	< 115mm
WFL/H (Z-scores)	-2 to +2	- 3 to < -2	< -2
Bilateral Pitting Edema	absent	absent	absent/present

2. **Active Adaptive case finding** is a modified method of active case finding where a community health worker may visit selected households strategically to screen for MAM and to ask for other cases of MAM in the neighborhood, or visit other key informants in the community, such as teachers, barangay officials, church leaders to identify children with MAM.

3. **Passive case finding** is the method used when health care workers systematically screen children during the conduct of existing health services to find cases of MAM. Assessment based

on MUAC and/or WFL/H, or bilateral pitting edema, may take place during routine childcare visits, sick child consultations, and hospital admissions. In this method, the initiative lies with the members of the community, who themselves seek referral from appropriate health care providers in the community, or once the knowledge of programs and services is established.

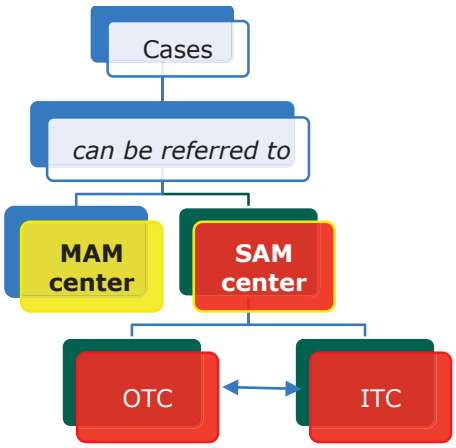


Figure 10 Referral decisions for case-finding

Cases identified would then be assessed further in the MAM centers either to be admitted to the program or to be referred to other CMAM programs (ITC or OTC), which will be discussed in more depth in the next section (Section 2). In cases where children are identified or considered to have MAM by members of the community other than the outreach workers, volunteers or healthcare providers, these should be referred to and sent to the health facility for proper screening, as well as orientation for the caregivers if admissible, and eventually avail of the services.

1.3. Coverage

$$COVERAGE = \frac{number\ of\ children\ managed\ for\ MAM}{total\ number\ of\ children\ in\ the\ community\ with\ MAM}\ x\ 100\%$$

Coverage refers to individuals who need treatment against those who are actually receiving treatment. Maximized coverage means the programs and services in combating wasting is reaching and treating as many children as possible, reducing the prevalence of wasting in the community. It can be affected by the acceptance of the program in the community, the location and accessibility of the program sites, frequency of distributions, waiting time, security situation, and service quality among other things. To achieve this, an effective community outreach and mobilization should be achieved. The 2011 Sphere Handbook (The Sphere Project, 2011) on Minimum Standards in Humanitarian Response identifies the minimum acceptable levels of coverage for the management of MAM.

SPHERE Standard
Coverage
- Rural > 50%
- Urban > 70%
- Camp > 90%

Figure 11 Minimum Standards in Humanitarian Response and acceptable levels of coverage for the management of MAM as indicated in the Sphere handbook

2. ASSESSMENT

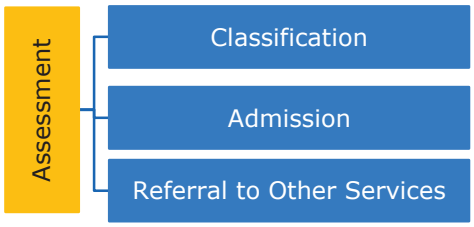


Figure 12 Components of Assessment for the Management of MAM

Assessment in the management of MAM is performed in established MAM centers, such as barangay health stations, municipal health unit clinics, health offices or any defined location in the community. Once the children are identified to have MAM or referred to the program, they are brought to these facilities for further assessment by trained individuals on the management of MAM.

2.1. Arrival and Classification of Nutritional Status

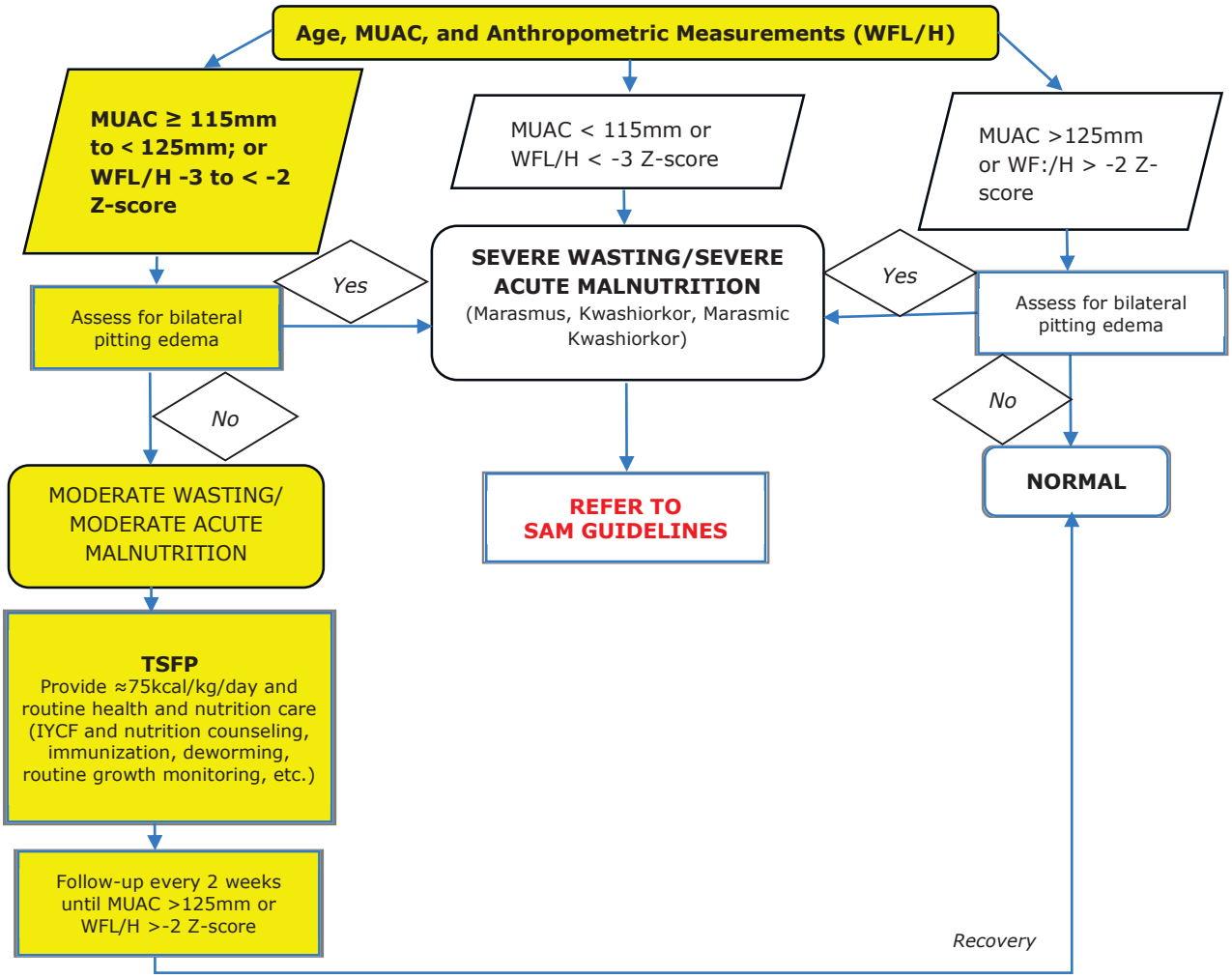


Figure 13 Flowchart for TSFP, OTC and ITC

Nutritional status in acute malnutrition can be classified as moderate (MAM), severe (SAM) or no malnutrition (normal) based on the measure of MUAC in a child 6 up to 59 months old; the measure of WFL/H according to the Child Growth Standards; and/or the presence or absence of bilateral pitting edema. The management of MAM shall be closely linked with other PIMAM components. Thus, the interrelationship for screening and triage in Figure 13.

A child with MAM is admitted (or enrolled) in the Targeted Supplementary Feeding Program (TSFP) for nutritional rehabilitation and routine child health care. If the child is found to have a medical problem, refer to DOH Integrated Management of Childhood Illness (IMCI) protocol.

2.2. Admission

All children 6 months to 59 months of age who fulfill any of the admission criteria in Table 4 or classified as having MAM should be admitted to the MAM treatment program.

Table 4. Admission Criteria for MAM Cases

Age Group	Admission Criteria
Infants and young children 6–59 months	▪ WFL/H Z-score -3 to < -2 (WHO CGS) **OR** ▪ MUAC 11.5 cm to < 12.5 cm **AND** ▪ Absence of bilateral pitting edema*

**edema is a clinical sign of SAM even if MUAC and WFL/H criteria are not met, thus referral to SAM program*

Types of Admission

There are four types of admission under the MAM treatment program.

4 Types of Admission
- New Admission
- Relapse
- Readmission
- Referral

1. **New admission** in accordance with the criteria for admission (Table 4)
2. **Relapse** of a child with MAM for a second episode after being discharged as cured
   - If child who recovered from MAM or SAM (WFL/H ≥-2 Z-score, MUAC ≥12.5 cm, no edema for at least 14 days) is losing weight during follow-up or months after discharge and reaches the criteria for MAM (WFL/H of -3 to <-2 Z-score, MUAC ≥11.5 cm to <12.5 cm), s/he is admitted to MAM program.
3. **Readmission** of defaulter after less than two (2) months of absence without reaching the discharge criteria
   - **Defaulter –** when the patient has not returned for three (3) consecutive visits and a home visit, neighbor, village volunteer or other reliable source confirms that the patient is not dead.
4. **Referral** – internal transfer from another TSFP site supported by documents (see Annex 11 and Annex 12 for Copy of Child Forms with admission referral indication)

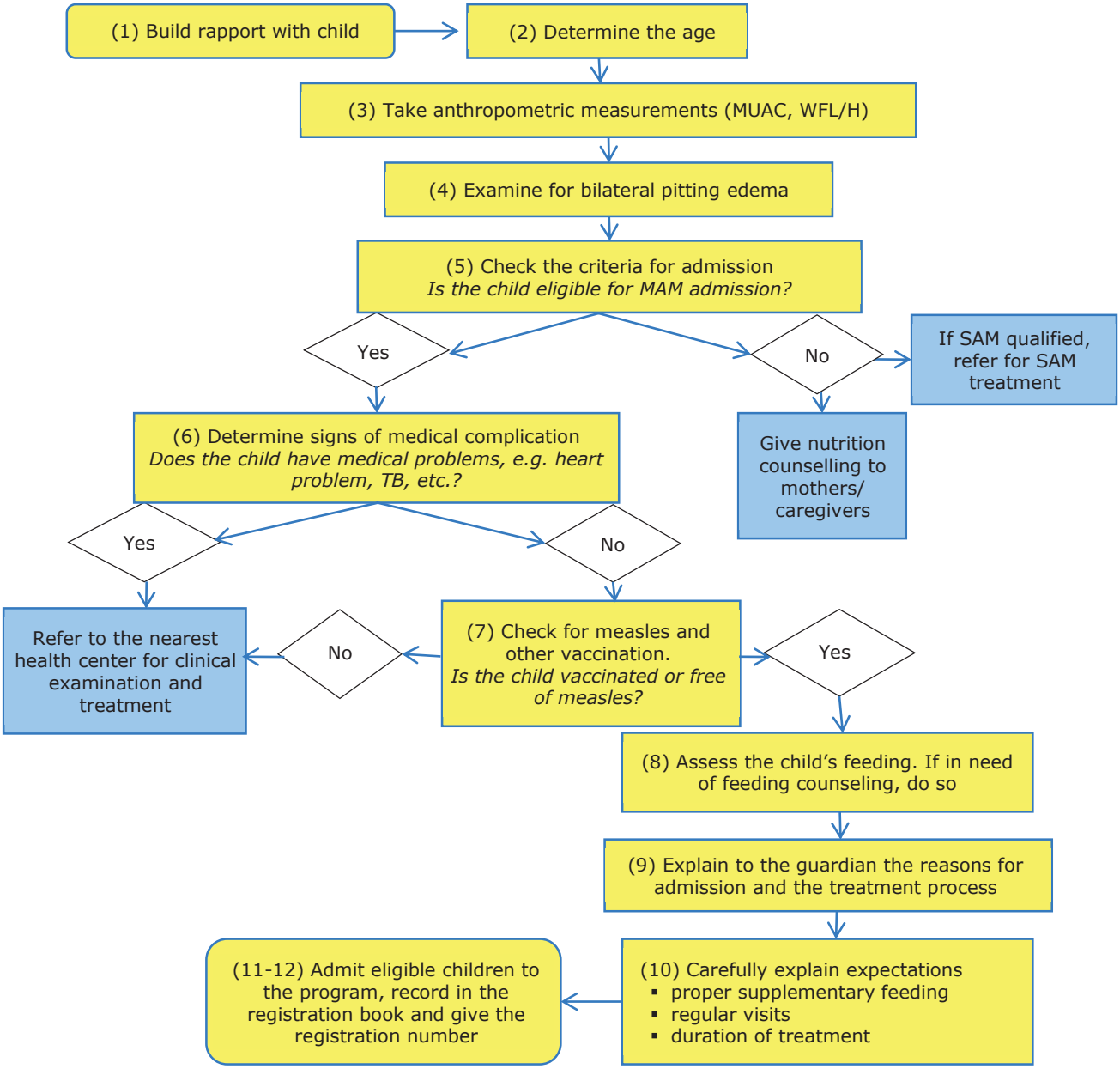


Figure 14 Procedures of Admission

Procedures of Admission to the MAM Program

STEP 1. **Build rapport** with the child and the caregiver so that assessment can proceed smoothly. Establish a functional worker-client relationship with the child, as well as with the mother or caregiver to encourage them to be active participants in the treatment process.

STEP 2. **Determine the child's age**, whether or not she or he is within the age range of 6 months to 59 months. The attending health worker can confirm this with the help of birth certificates or existing records of the child in the clinic or health center (e.g. ECCD Card, health card). Where no records exist, the child's age can be determined by referring to a local calendar of events.

STEP 3. **Take the child's anthropometric measurements** (see Annex 4)
Mid-Upper Arm Circumference of the left arm is a quick way of identifying acute malnutrition in children under five. It has a color-coded indicator of nutritional status.

Table 5. MUAC Interpretation			
Classification	**SAM**	**MAM**	**Normal**
MUAC	<11.5 cm	11.5 cm to <12.5 cm	≥12.5 cm
Color	RED	YELLOW	GREEN

Weight-For-Length or Weight-For-Height (always using the same scale) is the assessment of the child's body weight in proportion to attained growth in length or height, in accordance to the Philippine's WHO-adapted WFL/H chart. MAM is in the wasted category between -3 and <-2 standard deviation (SD) or Z-scores as shown in Table 6 (see Annex 9 for WHO CGS-based charts for boys and girls).

Table 6. WHO's Child Growth Standards for WFL/H in kg-cm

Length (cm)	Weight (kg)							
	Severely Wasted	Moderately Wasted		Normal		Overweight		Obese
		From	To	From	To	From	To	
	< -3SD	-3SD	<-2SD	-2SD	+2SD	> +2SD	+3SD	> +3SD

- ❖ Take into consideration the cultural norms when defining the place for weighing a child without clothing.

STEP 4. Examine whether the child has bilateral pitting edema. *(*Refer to *National Guidelines on the Management of SAM)*

Grades		
Grade 1	**Grade 2**	**Grade 3**
Both feet	Both feet up to hips and dangling hands	Both feet, whole body including neck and face

A child has edema when an indentation remains on the top side of each foot after pressing it gently but firmly for three seconds with the thumbs. If positive with the bilateral pitting edema test, the child should be admitted to the SAM treatment program, even though the child qualifies as MAM or normal in the MUAC and/or WFL/H measurements.

Edema has three grades according to the level of the body affected:

- Mild (Grade 1): both feet up to the ankles (+)
- Moderate (Grade 2): both feet to the hips, including the dangling hands (++)
- Severe (Grade 3): whole body, plus the neck and face (+++)

STEP 5. Validate nutritional status. Check with the criteria for admission whether or not the child is eligible to be admitted for the MAM treatment program.

STEP 6. Determine if the patient has any sign of a medical problem; if the child has any complications according to the IMCI criteria (WHO, 2014), refer him/her to the nearest health center immediately for clinical examination and treatment, "fast track" those obviously ill to the health center. Prioritize them for special care. Take particular attention to children with cerebral palsy, heart problems, childhood TB, cleft palate, twins, children of teen mothers, and children under the care of relatives, who probably are at risk of acute malnutrition. Take note of this in the registration form. For management of co-morbidities,

refer to higher facilities or to other programs that would help prevent malnutrition of these cases.

Example checklist of medical complications	
☐ Fever	☐ Dehydration
☐ Diarrhea	☐ Pneumonia
☐ Ear problem	☐ Severe vomiting
☐ Severe anemia	☐ Loss of appetite
☐ HIV infection	☐ TB infection
☐ Malaria	(DOH, WHO, UNICEF, 2015)

STEP 7. **Systematically check for all vaccination status** by updating on the EPI record, particularly for measles for children over 9 months. If the child has not been vaccinated, refer for vaccination to the nearest health center.

STEP 8. **Assess the child's feeding**. (See Annex 5 for Feeding Assessment)
Advise the mother/caregiver on proper feeding of the child. (See Annex 6 for Feeding Recommendations)

STEP 9. **Explain to the mother/caretaker** the reasons why the child is to be admitted to the MAM treatment program and how the treatment will be organized.

STEP 10. **Carefully explain the expectations**. Explain the manner of how the child should consume the supplement and visit the center (regular attendance, family sharing, MAM child to be fed separately from siblings, supplement not to be taken with ordinary meals, etc.). Explain as well that her/his child needs to gain weight with reference to length or height (WFL/H >-2 Z-score) every follow-up visit and/or they have to reach the 'Green Color' of MUAC (>125mm) before they can be discharged from the program. The treatment should be explained in detail to the parent, caregiver or beneficiary to ensure that the importance of adherence to treatment is understood.

STEP 11. **Enter information of the child eligible for admission** to the program in the registration book and assign a registration number
If the child already has a Child Number as per ECCD Card, write it in the 2nd (registration number) column of the registration book.

STEP 12. **Enter all the information for admission** to the program in the ration card and give it to the caregiver. A good registration system allows both close monitoring and successful management of individuals, provides information for the compilation of appropriate indicators and statistics to monitor the functioning of the feeding program.

2.3. Referral to Other Services

Referrals in PIMAM services are fueled by strong community outreach resulting in active, active-adaptive and passive (self-referrals) case-findings by community members. Admission criteria determine which service component a child is admitted to initially.

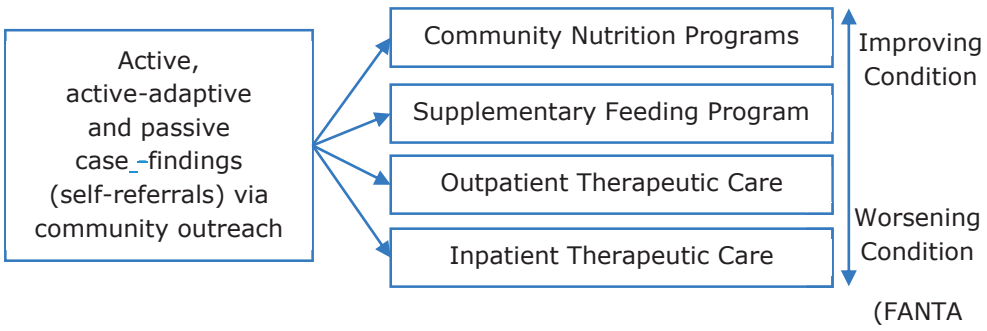


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Figure 15 Referral Scheme among CMAM Components

The following are the types of referral in the MAM treatment program:

- Referral from community outreach (active case-finding or self-referral)
- Referral to and from another MAM center, in case of migration

3. INTERVENTIONS AND SERVICES

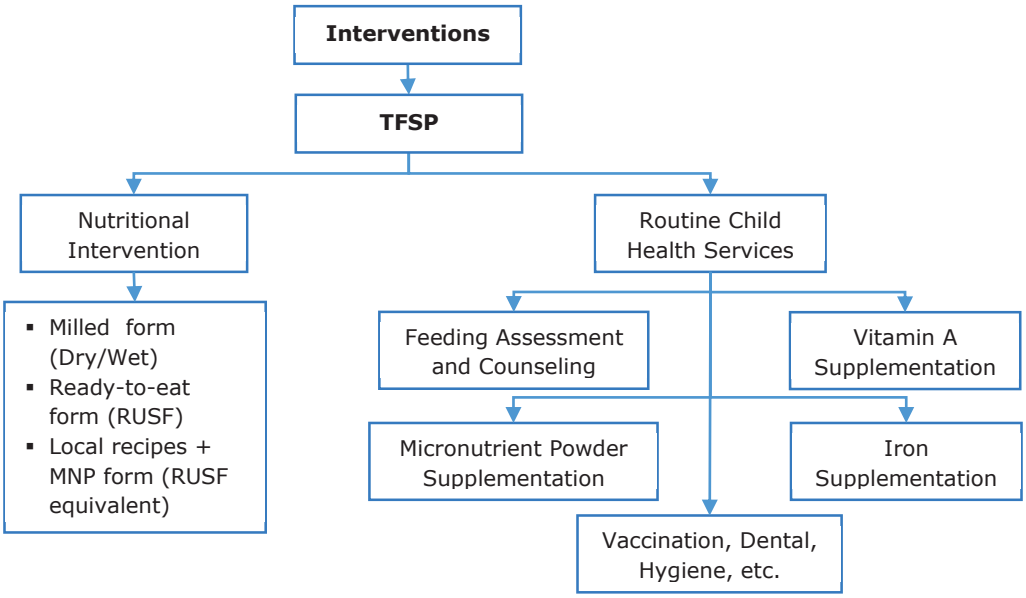
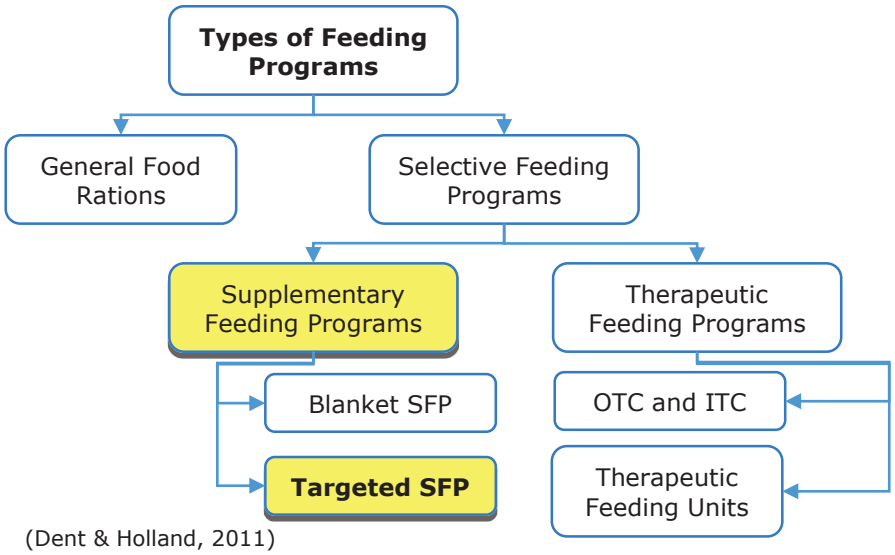


Figure 16 Interventions for Management of MAM

This section discusses the various interventions in the TSFP for the management of MAM. It includes addressing the nutritional status of the child and providing routine child health services to ensure better management of the health and nutrition of the child.

3.1. Nutritional Intervention



(Dent & Holland, 2011)

Figure 17 Types of feeding programs

The nutrition intervention for the management of MAM is through targeted supplementary feeding program (TSFP), while the blanket supplementary feeding program (BSFP) is the nutrition intervention for the prevention of MAM, provided with wet rations or dry rations.

Supplementary feeding interventions

2 Types of Supplementary Feeding Programs:
- ***Targeted (TSFP)* –** for children with MAM only
- ***Blanket (BSFP)* –** for general population of children

1. **Targeted Supplementary Feeding Program (TSFP).** This is an intervention wherein a supplementary ration is provided to specific members of a vulnerable group whose requirements may not be met by the general ration (e.g. moderately acute malnourished children under five, or pregnant and lactating women).

The **objectives** of targeted supplementary feeding are:
- To rehabilitate MAM cases;
- To prevent cases of MAM from aggravating and developing to SAM;
- To reduce of mortality and morbidity risks in children under five.

TSFP provides treatment for children with MAM. These children can be treated at home with locally available supplementary food fortified with micronutrient powders (see Annex 7 for RUSF alternatives) or RUSF and intensive nutrition counselling plus routine health care (consistent with IMCI guidelines, outpatient treatment of infections or referral to hospitals), in line with the National Supplementary Feeding Guidelines.

To be effective, TSFP should be implemented when there is sufficient food supply or an adequate general ration, while BSFP is often implemented when general food distribution (GFD) for the household has yet to be established or is inadequate for the level of food security in the population. The supplementary ration is meant to be an addition to, and not a substitute for the general ration.

2. **Blanket Supplementary Feeding Program (BSFP).** This is an intervention wherein there is provision of supplementary ration to the general population of an identified vulnerable group (e.g. children under five in general, elderly persons, or women of childbearing age) for a defined period in order to impede the decline in nutritional status within this population. This is usually implemented during an emergency where there is lack of food supplies.

The **objectives** of blanket supplementary feeding are:
- To prevent further deterioration in the nutritional status of at-risk groups in a population; and
- To reduce prevalence of MAM in children under five, thereby reducing the mortality and morbidity risks.

Three forms of supplementary food

3 Forms of Supplementary food:
- ***RUSF*** – ready to eat
- ***Locally Prepared Foods with MNP***
- ***Blended cereals*** – as wet or dry ration (preparation needed)

The three forms of supplementary food are RUSF, locally prepared foods with MNP and blended cereals, which are modified in their energy density, protein, fat and micronutrient composition to help meet the nutritional requirements of MAM children. One sachet or ration of supplementary food provides about 500 kcal. It is intended to supplement or add on to the usual home meals of under five children beyond the usual amounts of their home diets. Supplementary foods are also different from food supplements, which refer to vitamin and mineral supplements in unit dose forms

such as capsules, tablets, powders or solutions, where national jurisdictions regulate these products as food. Supplementary foods have been used to rehabilitate those who are moderately malnourished or to prevent the deterioration of nutritional status of those most at risk by meeting their additional needs, focusing particularly on children 6-59 months. Examples of supplementary food includes RUSF which are lipid-based nutrient supplement ideal for the management of MAM; locally prepared foods which can be prepared and can be as good as commercial RUSF in meeting the nutrient needs when planned properly; and blended cereals which are fortified to meet the nutrient content needed for the management of MAM.

Sample Food Supplements

RUSF

Locally Prepared Foods + MNP

Blended Cereals

The three forms of supplementary food which are RUSF, locally prepared foods, and blended cereals are described below:

1. Ready-to-use Supplementary Food (RUSF)

This supplementary food is a commercially produced food preparation made of peanuts*, sugar, milk powder, vegetable oils, and vitamins and minerals, though they may be made with chickpeas, almond or other commodities.

- It comes in individual packages and used for the management of moderate acute malnutrition in infants and children 6-59 months.
- Provides 513-550 kcal per day with 12.6-15.4 grams of protein and 30-38.6 grams of fat and 42.7 g carbohydrate.
- It is fortified with 24 micronutrients and contains essential fatty acids and quality protein to ensure that the child's nutritional needs are met.
- It can be consumed directly from the package with no dilution, mixing or cooking necessary.

Products	Ration	Duration of intervention	Energy & Nutrient/ration
•Ready-to-Use Supplementary Food (e.g. Plumpy Sup)	•1 sachet/day •92g/day	•approximately 3 months (90 days)	•500kcal •12.5g protein •31g fat •42.7 g carbohydrate*

** Carbohydrate is based on calculations from the energy, protein, and fat content of RUSF.*

** While G6PD is linked with broad beans (fava beans), there has been no report concerning G6PD and peanuts/groundnuts consumption on* Medline (Briend, 2013)*. However, proceed with caution if a child enrolled in the program is known to have G6PD. Observe the tolerance of the child for RUSF throughout the course of enrollment in the program.*

2. Locally Prepared Foods

In the absence of RUSF, supplementary foods for 6-59 month children can be prepared from local food sources. Micronutrient Powder (MNP) should be added to the prepared food. When planned properly, the energy and macronutrient (protein, fat and carbohydrate) contents of the locally prepared food are comparable to the RUSF. For ease of computation, the Food Exchange list (Annex 20) can be used to calculate the energy and macronutrient content.

The steps in calculating the supplementary food, including sample calculation and sample menus are shown in Annex 21. The ND/nurse/midwife may modify the calculation depending upon the availability of local foods but making sure that the energy and macronutrient contents are close to that of RUSF.

- Locally prepared foods can be given in between the regular meals/feeding of breakfast, lunch and supper.
    - The food shall have an energy content of 510-560 kcal, protein of 11-16 grams and fat of 26-36 grams (the rest from carbohydrates: 30.5-70.5 g carbohydrates*), equivalent to a sachet of RUSF.
    - One sachet of MNP should be given every other day. MNP is distributed only to 6-23 month old children by DOH and the LGUs. Make sure that MNP is made available to 24-59 month old children with MAM.
    - The food should contain ALL essential nutrients in adequate amounts. The extra nutritional requirements will enable young children to have accelerated weight and height gain and full physiological recovery.
    - The nutrients should be biologically available to children with altered intestinal function that is associated with MAM.
    - Locally prepared foods can be stored at home up to 4 hours at a time at room temperature.
- In areas where infants and children can be gathered in a community, the BNS and the mothers can prepare the supplementary foods such as *ginataang bilo-bilo, arroz caldo*, squash congee, and fried rice in the community center. This may also be an opportunity for the BNS to conduct nutrition education, food safety, and WASH in the community. Cooking demonstrations of complementary/supplementary foods and gardening may also be done.
- The Barangay Nutrition Committee may also opt to identify local food vendors who can provide and/or prepare the complementary/supplementary food given that the local food vendors have the necessary business and sanitary permits, and health certification.

Products	Ration	Duration of intervention	Energy & Nutrient/ration
•Locally Prepared food	•Can be given 1x or 2x depending on the prepared food.	•3-6 months (90-180 days)	•510-560kcal •11g-16g protein •26-36g fat •30.5-70.5 carbohydrate*

**Range of carbohydrate is based on calculations from the accepted range for energy, protein, and fat content of RUSF* (WFP, Technical Specifications for Ready-to-Use Supplementary Food, 2016).

Continued breastfeeding for infants 6 to 24 months and beyond and giving of appropriate complementary foods is necessary in addition to the locally prepared food comparable with RUSF given to the child.

3. Blended Cereals

Blended cereals are milled supplementary food from whole grains and beans such as wheat, oats, soy beans, and mung bean. The blended food is modified in its energy density, protein, fat or micronutrient composition to help meet the nutritional requirements of specific formulations. This food is not intended to be the only source of nutrients but should complement the regular diet of the child. The blended cereals can be given to children as wet feeding or as dry take home rations where preparation can be done at home.

Products	Ration	Duration of intervention	Energy & Nutrient/ration
•Fortified Blended Food (e.g. Supercereal Plus)	•130g/day •ratio prop 500kcal	•3-6 months (90-180 days)	•500kcal •21g protein •13g fat •75 g carbohydrate*

**Carbohydrate is based on calculations from the energy, protein, and fat content of blended cereals.*

This can be provided either through:

- **Wet Supplementary Feeding** (on-site rations)
  - ☐ Food is prepared once or twice daily in the kitchen of the supplementary feeding center (SFC) and is consumed by the child in the center for a duration of the treatment program.
  - ☐ The child is then brought to the center daily to consume the supplementary food.
  - ☐ Usually implemented in emergency settings when people have limited access to fuel and water, security conditions put people at risk while taking rations home, or for those who need additional food but cannot cook for themselves.
  - ☐ This option is only used in exceptional circumstances.
  - ☐ Two meals are needed to provide the right amount of energy and protein given the small stomach size of children.
  - ☐ Can also be given in the SFC while the participant waits for his/her dry ration.

- **Dry Supplementary Feeding** (take-home rations)
  - ☐ The ingredients are mixed in the SFC prior to distribution; the mixture is taken home to be prepared and consumed by the child at home, or in temporary settlements for special circumstances such as emergencies.
  - ☐ The ration is a fortified blended food (FBF) with sugar and oil (pre-mixed or distributed separately), or may include high-energy biscuits, beans, lentils and wheat.
  - ☐ Distribution is every 1-2 weeks depending on the resources, access to distribution sites, security and other conditions.
  - ☐ One-week distribution is preferred for hygienic purposes, storing less food in the household
  - ☐ Experience also shows that the ration is shared and consumed within a short time after distribution; biweekly distribution is preferred when the beneficiaries have a long way to travel to reach the SFC .
  - ☐ The distribution days are usually timed with market days, while there are MAM days or SFP days in some areas, and usually once a month distributions in GIDAs.
  - □ A take-home or dry ration is usually more than the amount required in order to compensate for family sharing.Sharing of ration among family members will lessen the energy and nutrients that are intended for the child.

3.2 Routine Child Health Services

All children 6 to 59 months of age, whether registered or not to the SFP shall also receive their regular health services as scheduled. These services are available in BHSs and RHUs. If the SFC is far from the health facility, arrange for a mobile health team who can provide these services such as immunization, micronutrients, deworming as well as feeding and other health advice.

Table 7. Sample timeline for routine health services in a year

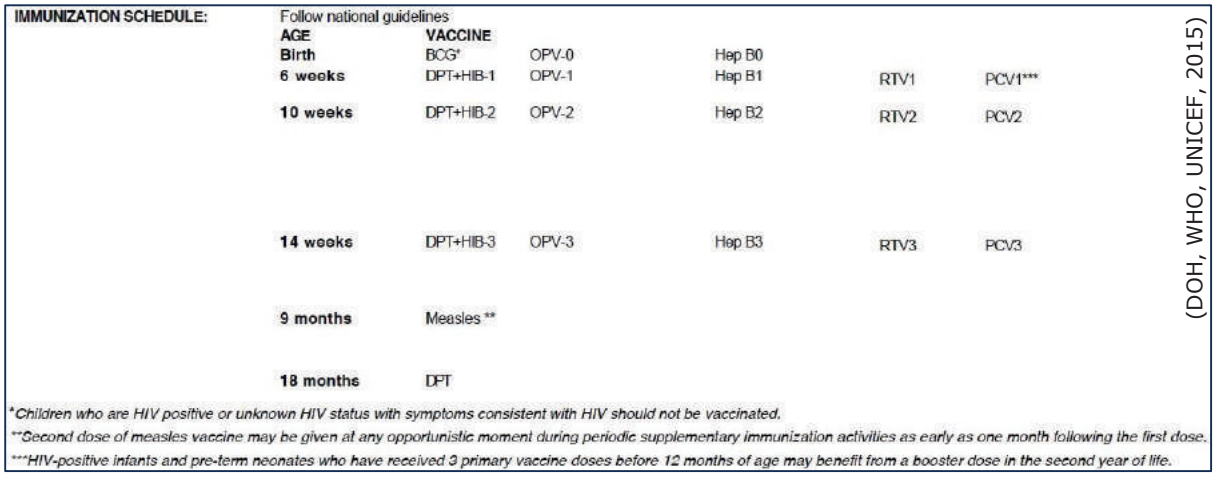
Month	Breastfeeding	Oral Health	Immunization	Vitamin A	Deworming	MNP/Iron
1st						MNP
2nd						MNP
3rd			Measles			Iron
4th				GP	GP	Iron w/ folate
5th						
6th						Iron
7th						
8th						
9th						Iron
10th				GP	GP	
11th						
12th			DPT			

Child Health Services
- Breastfeeding and feeding condition
- Oral health
- Immunization
- Vitamin A
- Deworming
- MNP/Iron

1. **Check breastfeeding and feeding of the child.** If there are any breastfeeding or feeding problems, a trained health worker should be able to provide advice on feeding. (See Annex 6 for Feeding Recommendations)

2. **Oral or dental health problems may affect feeding**, therefore advice the mother or caregiver to bring the child to a dentist for check-up every 6 months.

3. **Immunization**
   - ☐ The Expanded Program on Immunization (EPI) is committed to its goal of universal access to all relevant vaccines for all at risk, including newborns, infants and under five children, in order to control vaccine-preventable disease and achieve better public health. Diseases targeted by EPI are complications of tuberculosis (e.g. TB meningitis, TB of the spine and miliary tuberculosis), Hepatitis B, diphtheria, pertussis (whooping cough), tetanus, pneumonia, meningitis and ear infection caused by *Haemophilus influenzae* type b, poliomyelitis, measles, mumps and rubella.
   - ☐ All children between nine months and fifteen years of age (refer to DOH guidelines) should be immunized with necessary vaccines. The vaccination status of the child should be checked on admission and where no record exists, referral should be made to a health facility (or health care provider) where immunization services can be availed or provided. Where no facilities are available for referral, the vaccination should be provided within the program at the SFC.



IMMUNIZATION SCHEDULE: Follow national guidelines

AGE	VACCINE				
Birth	BCG*	OPV-0	Hep B0		
6 weeks	DPT+HIB-1	OPV-1	Hep B1	RTV1	PCV1***
10 weeks	DPT+HIB-2	OPV-2	Hep B2	RTV2	PCV2
14 weeks	DPT+HIB-3	OPV-3	Hep B3	RTV3	PCV3
9 months	Measles **				
18 months	DPT				

*Children who are HIV positive or unknown HIV status with symptoms consistent with HIV should not be vaccinated.
**Second dose of measles vaccine may be given at any opportunistic moment during periodic supplementary immunization activities as early as one month following the first dose.
***HIV-positive infants and pre-term neonates who have received 3 primary vaccine doses before 12 months of age may benefit from a booster dose in the second year of life.

(DOH, WHO, UNICEF, 2015)

Figure 18 IMCI Immunization schedule

4. Vitamin A Supplementation

- ☐ On admission, check on the health card and/or ask the mother if the child has received Vitamin A in the last six months.
- ☐ Administer Vitamin A as follows if it has not already been taken in the past 2 months and it is not anticipated that it will be given in other programs within the next 2 months.
- ♦ Vitamin A is routinely given through the *Garantisadong Pambata* every April and October
- ♦ Children on RUSF **SHALL NOT** be given Vitamin A as **RUSF already has sufficient micronutrients**.

Table 8. Vitamin A Supplementation

Age Group	Vitamin A IU oral intake	Price/unit[1]
6–11 months	100,000 IU	₱ 1.44
12–59 months	200,000 IU	₱ 1.44

5. Mebendazole 500 mg or Albendazole 400 mg

- ☐ Upon admission, check the health card and/or ask the caregiver (mother) of the child if s/he has taken Mebendazole in the last six (6) months.
- ☐ If not, give Mebendazole to the child (12 months or older) on the 2nd visit, with six 6-month intervals.
- ♦ Deworming is routinely given through the *Garantisadong Pambata* every April and October

Table 9. Mebendazole/Albendazole Treatment

Age Group	Mebendazole 500mg tablet	Price/unit1 (as of 2013)	Albendazole 400mg tablet	Price/unit1 (as of 2013)
<12 months	N/A	-	N/A	-
12–23 months	one (1) tablet as single dose	₱ 1.97	200mg single dose/6 months	₱ 0.84 x ½
24 months and above	one (1) tablet as single dose		400mg single dose/6 months	₱ 0.84

[1] Sources: DOH (2013). *The Philippine Drug Price Reference Index* (Second ed.). Manila: Department of Health.

6. Micronutrient Powder Supplement (MNP)

MNP **SHALL NOT BE GIVEN** to MAM children on RUSF as RUSF is already sufficient on micronutrients. But in the absence of RUSF, MAM children who are only given food with energy (500 kcal) and protein (13 grams) equivalent to RUSF shall receive MNP.

MNP is given is an easy-to-use mixture of vitamins and minerals designed for improved nutrition in children, providing essential nutrients by adding it to a child's home-cooked food just before consumption. The benefits of MNP include proper growth, improved immune system, increase in appetite and prevention of micronutrient deficiencies in a child.

- ☐ Give micronutrient powder supplement daily to infants and young children 6–59 months of age for a minimum duration of 2 months (HFTAG, 2016).
- ☐ Use this at 6 months of age during the introduction of complementary feeding.
- ☐ Mix MNP with complementary food, preferably soft or semi-solid, before feeding.
- ☐ Do not add MNP to food before or while cooking.

(PNC, 2014)

Figure 19 IEC material for MNP

Method of distribution:

- ♦ BHW/BNS provides orientation to beneficiaries regarding the use of MNP
- ♦ Mothers/Caregivers will be given one-month supply (10 sachets) of MNP
- ♦ Mothers/Caregivers will visit the health center every month for monthly supply of MNP

Table 10. Micronutrient Powder Supplementation

Age	MNP	Price/unit* (as of 2014)
6–11 months	60 sachets to consume within 6 months	₱ 1.32 ($0.028) for a 1g sachet
12–23 months	60 sachets within 6 months; 120 sachets in a year	

**source: GNC MAM Task Force Product Sheet, version 2014*

7. Iron (therapeutic dose for children with iron-deficiency anemia)

☐ Iron: give one (1) daily dose for three (3) months

Table 11. Iron/Folate Therapeutic Dose				
Age or Weight	**Ferrous Sulfate 200mg** (60mg elemental iron)	**Price/dose**1 (as of 2013)	**Iron syrup** (30mg/5mL) **or Iron drops** (15mg/0.6mL)	**Price/unit**1 (as of 2013)
2–4 months (4 to <6kg)			Syrup: 1.0 mL (<¼ tsp)	₱ 10.65 for 60mL syrup OR ₱ 12.93 for 15mL drops
4–12 mos. (6 to <10kg)			Syrup: 1.25 mL (¼ tsp)	
12mos.–3yrs. (10 to <14kg)	½ tablet	₱ 0.85 x ½	Syrup: 2.0 mL (<½ tsp) Drops: 0.5 mL	
3–5 yrs. (14 to 19kg)	½ tablet		Syrup: 2.5 mL (<½ tsp) Drops: 0.6 mL	

4. MONITORING, FOLLOW-UP & REFERRAL

4.1. Tracking and Monitoring of MAM Cases

Upon admission, ensure that there is a record in the register of the following:

- The target WFL/H and/or MUAC for discharge, include this also in the ration card and logbook;
- The WFL/H and/or MUAC, which would trigger transfer to OTC for SAM

Consider the following procedures for monitoring and recording data for the management of MAM. Make sure to reiterate that the child and caregiver should regularly visit the SFC for monitoring and distribution of supplementary ration.

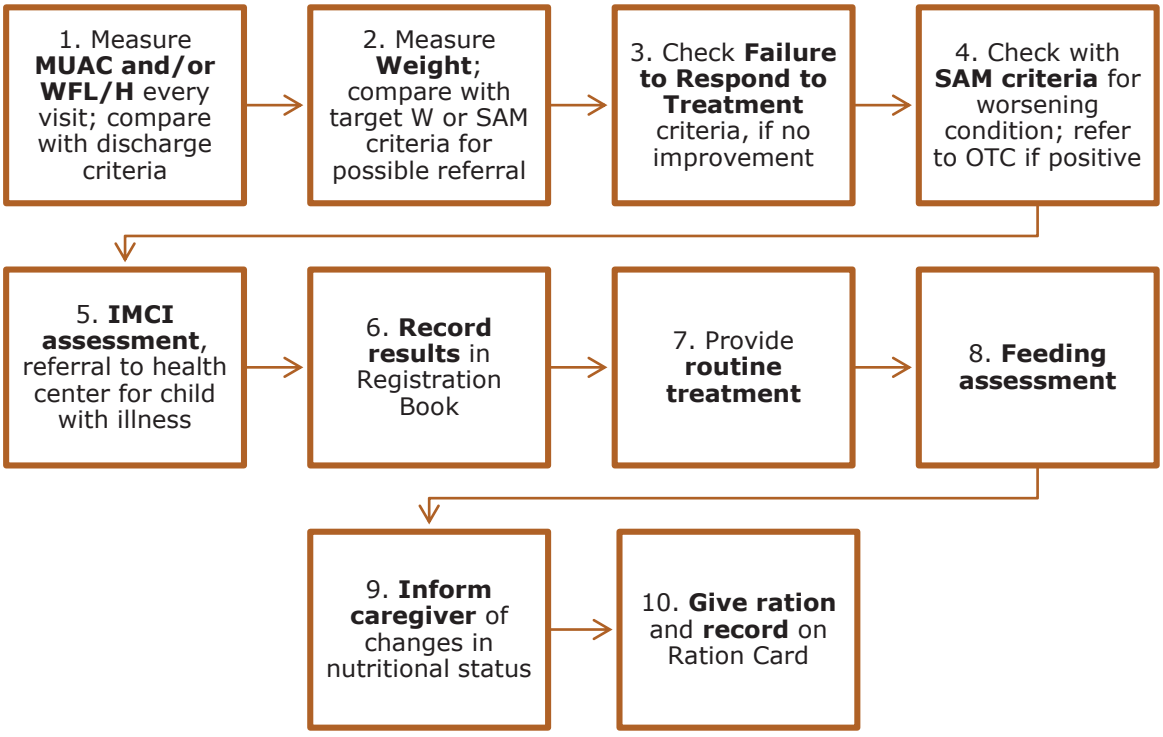


Figure 20 Procedures for monitoring

STEP 1. Take the child's MUAC measurement at each visit and compare with the discharge criteria to determine whether the child is already eligible for discharge or not, and/or take the WFL/H measurement once a month or if height board is readily available at the site.

STEP 2. Take weight measurements of the child at each visit and compare with the target weight recorded at the time of admission and with the minimum weight and/or MUAC for transfer to SAM treatment. Refer to OTC or ITC if qualified SAM case.

STEP 3. Diagnose whether the child meets any of the criteria for Failure to Respond to Treatment (Section 4.2) if in case there is no improvement with the child.

STEP 4. Check whether the MAM child meets the SAM criteria (WFL/H <-3 Z-score and/or MUAC <115mm, or presence of bilateral pitting edema) and if the child has SAM, immediately refer the child to the OTC or ITC (if with medical complications).

STEP 5. Ask the mother or caregiver if the child has an illness, and if yes, refer to the health center for medical check-up and treatment or IMCI assessment.
STEP 6. Record results in the appropriate TSFP Registration Book.
STEP 7. Provide routine treatment at the appropriate visits.
STEP 8. Follow-up on the child's feeding practices, i.e. complementary feeding with continued breastfeeding.
STEP 9. Explain to the caregiver the change in the child's nutritional status, if any.
STEP 10. Give and record ration at each visit on the Ration Card of the child.

Table 12. Summary of tracking and monitoring in the SFC

Activities in SFC/SFP	Frequency
MUAC is taken	Every 2 weeks
Weight is taken using the same scale	Every 2 weeks
Height and length are measured	At admission, monthly and if child substitution is suspected
WFL/H can be calculated as required	Day of admission and discharge

(Golden & Grellety, 2011)

4.2. Failure to Respond to Treatment

Upon admission of MAM cases, calculate the discharge weight and/or MUAC and the weight and/or MUAC at which a criterion for SAM is reached. This should be recorded to identify children who are not responding to treatment accordingly. They should not stay in the standard program; the cause of failure to respond should be investigated, managed and actions be taken urgently.

When child shows failure to respond to treatment, consider the following:
1. Criteria for failure to respond
2. Reasons for failure to respond
3. Step-by-step approach to address the problem
4. Management of cases that failed to respond to treatment

Criteria for failure to respond to treatment

- ☐ Any weight loss within the consecutive 3 weeks in the program or at the 2nd visit
- ☐ Either no or trivial weight gain after 5 weeks in the program or at the 3rd visit
- ☐ Weight loss exceeding 5% of body weight at any time (the same scale must be used)
- ☐ Failure to reach discharge criteria after 3 months in the program
- ☐ Abandonment of the program (defaulting)

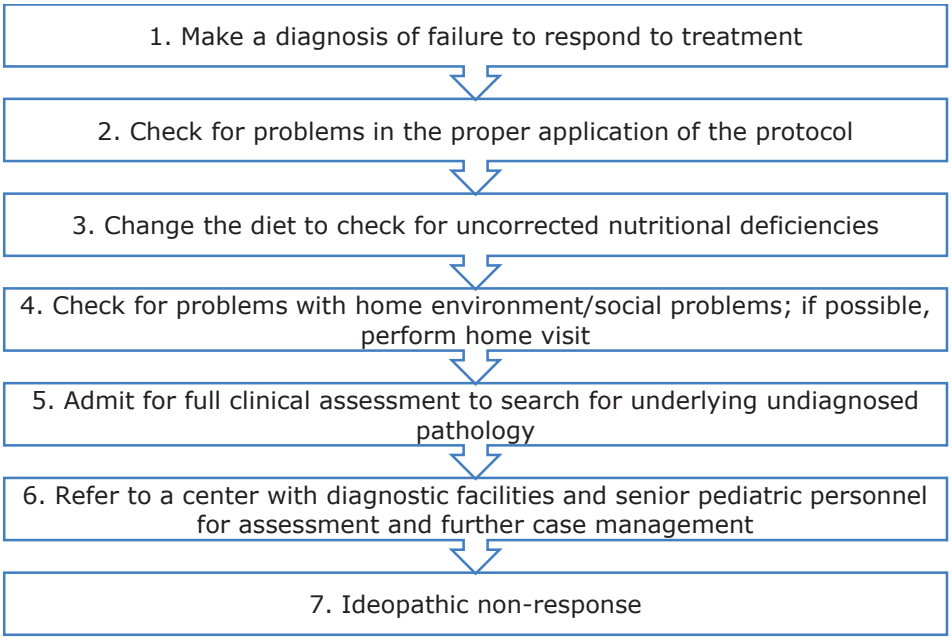
Reasons for failure to respond

- ☐ Problems with the application of the protocol
- ☐ Nutritional deficiencies that are not being corrected by SFP-supplied diet
- ☐ Home/social circumstances of the patient
- ☐ An underlying physical condition/illness
- ☐ Other causes

Step by step approach to address failure to respond

To address failure to respond to treatment, Golden and Grellety have developed an approach to manage such cases (Figure 21). This is performed by the trained individuals on the management of MAM (BNSs, BHWs, community volunteers) when it is evident that the child's condition is not improving or reaching the expected results after months of treatment.

Figure 21 Approach to manage failure to respond to treatment



(Golden & Grellety, 2008)

a. Protocol Problems

When a significant number (10% and above) of children in treatment fail to respond to treatment, proper application of protocol and the training of field level staff should be reviewed, if possible by external evaluation. Implementation issues should be corrected.

If the failure to respond to treatment is because the caregiver is not given due respect (e.g. staff is rude), this must be investigated by the supervisor/manager of the SFC and addressed accordingly. If it is suspected that rations being given come up short for the nutritional need of the child or that there is diversion of food, unannounced post-distribution monitoring should be implemented by the trained individuals (BNS, BHW, Community Volunteer) by reweighing the food of recipients exiting the SFC or visiting a random selection of cases at home and examining or weighing the food they have recently received.

b. Uncorrected Nutritional Deficiencies

The old diets used for supplementary feeding of MAM children (CSB, UNIMIX, FAMIX etc.) are neither designed to promote rapid catch-up weight gain nor to return children to physiological normality, even if taken exclusively; the nutrient density does not compensate for the very low levels of some essential nutrients in the remainder of the diet. They often have low concentrations of several essential nutrients (e.g. potassium, magnesium, available phosphorus or zinc, etc.). The availability of these nutrients is very low from some of the diets and there are high concentrations of anti-nutrients. Such unbalanced supplements can even aggravate the malnutrition. Further, some contain very high concentrations of iron, which destroys other essential nutrients, such as vitamin C, during food preparation.

Particularly, when cereal-based FBFs are used, the next step is to test whether the child has an uncorrected nutritional deficiency. This is done by changing the ration given to a nutrient dense diet with few anti-nutrients, usually by giving RUSF. It is important to emphasize that the recovery of the child is slower than expected and that the diet should be given exclusively to the child and **not to be shared**, and that it should be taken at least one hour before, or two hours after family meals and not mixed with the family food taken by the child.

c. Social Problems

Where RUSF is being used and the correct instructions as to its use have been given (and the caretaker confirms that they have been followed), or locally available food sources have

been properly provided to the child, the most likely cause of failure are social problems within the household. These could be:

- ☐ skepticism of family decision-makers with the treatment
- ☐ excessive sharing of ration within family members or selling of ration
- ☐ sibling rivalry
- ☐ parental psychopathology or mental health issues
- ☐ child abuse
- ☐ child rejection (paternity issues)
- ☐ caregiver fatigue
- ☐ abject poverty where the whole family is malnourished and use of the child's state to access food and services for the family (a full ration of food MUST be given to the whole family)
- ☐ discrimination against the family because of ethnicity.

These are the more common causes, but there are many other causes of social disruption that lead to malnutrition in a young child that lead to that child failing to respond to treatment. To address these, a **home visit** is made if possible to evaluate home circumstances. If the cause is not determined or a home visit is difficult to arrange, then the child is admitted in a facility – e.g. day care center, as linked with the social services of the LGU, and fed under careful supervision for about 3 days. If the child gains weight well with directly observed feeding, yet fails to gain weight at home, then there is a major biopsychosocial problem. This is then investigated by the health worker and the municipal social welfare and development officer (MSWDO) with an in-depth interview with the parents who have seen the child gain under supervised feeding and possibly a further home visit.

d. Underlying Medical Conditions

If the child does not respond to supervised feeding, then there may probably be an underlying medical problem. A careful history taking and thorough physical examination by a health professional should be performed and a search for common underlying conditions be made; in particular, tuberculosis, malaria, HIV, cerebral palsy, schistosomiasis, infections, cirrhosis, inborn errors of metabolism, Down's syndrome, post-meningitis neurological damage, etc.

e. Other Conditions

If the child is not improving and there is no recognized underlying condition, then the child should be referred to appropriate higher level health care facility with pediatric subspecialty services and diagnostic facilities.

Management for treatment failures

After doing the step-by-step process above in identifying the cause of failure to respond, the next step is to respond to the identified cause.

In addition to the main supplementary diet, or another blended fortified diet, a different supplementary diet shall be given, such as RUSF which is a higher quality ready-to-eat supplementary product fortified with all the nutrients.

Steps on managing treatment failures:

1. Improve nutritional intake
2. Check response to treatment
3. Investigate for social problems
4. Investigate underlying pathology

The following steps are taken one at a time in sequence without omitting any step:

Step 1 •**Improve the child's nutritional intake.**

Give the child local recipes plus MNP or RUSF (2 bags) with 1000 kcal/day for 15 days. This diet will correct all known nutritional deficiencies and give the additional lacking nutrients as well. There is no question of switching the diet from CSB to another inadequate diet (such as BP5). If the child still fails to respond, you will not have effectively excluded an undiagnosed/untreated nutritional deficiency as the cause of the failure. It MUST be the best diet available for recovery of a malnourished child. Using RUSF can also address certain issues, such as incapability of the caregiver to provide supplementary food that needs preparation due to social factors.

Step 2 •**On the 2nd visit, check the child's response to treatment.**

If s/he now responds to treatment, this means that it was a nutritional problem and/or issue at home.

- ☐ If it is solely nutritional problem, continue the treatment, with double quantity of local recipes plus MNP or two sachets of RUSF plus the SFC ration, for another month.
- ☐ If in addition there is social issue (with preparation of food), address this with encouraging the family to cooperate, or giving counselling with the assistance of social worker or SFC manager.

If s/he still does not respond to treatment, this means that the dominant problem is not a nutritional problem and that there is a need to investigate if it is mainly a social problem (proceed to next step).

Step 3 •**Investigate the home social circumstances; conduct home visit.**

It is very important to realize that many or most social problems will hardly be identified during one home visit (e.g. discrimination against the child, neglect, caregiver illness, sibling rivalry, etc.). This is because parents' and children's behaviors change during a visit by an outsider.

- ☐ During the home visit, if a problem identified can be alleviated or solved, deal with the problem and leave the child at home until further visits and follow-up.
  Example: sibling rivalry could be addressed by providing counseling to the family and helping them understand the importance of providing proper nutrition to the child with MAM with the cooperation of the family.
- ☐ During the home visit, if a problem identified cannot be alleviated or solved at home, take any necessary step to address the problem, such as:
  - Admission of the child to a facility;
  - Putting more resources into the home (e.g. food source, livelihood);
  - Arrangement for a different caregiver (e.g. relative, foster care, institution); or
  - Getting treatment for the caregiver (e.g. psychiatric, HIV, etc.)

  It is important to get the professional assistance of social service providers (social workers) or health care providers. *Example: with abject poverty, referring the family to the social services for initial response to lack of food or tapping sources of extra income for the family through links with available jobs, livelihood programs, etc.*

- ☐ During the home visit, if no problem is identified to account for the failure to respond to treatment, then it is still likely that there is a social problem that has not been identified during the home visit.

Admit the child for a trial feeding for 3 days under supervision. This can be in a day-care center or with "wet feeding" where the child is taken to a health center daily to receive food under supervision. Many of these facilities do not have full medical diagnostic capability – but they certainly can supervise feeding and care, and ensure that the child gets the food that is prescribed.

Step 4 **•Investigate underlying pathology.**

- ☐ If the child is still not responding to treatment, then s/he needs to be sent to a health facility (hospital) where there are clinicians/pediatricians or other physicians that would have expertise or training in evaluating the underlying medical condition.
- ☐ If this facility does not find the cause, then the child should be referred to a national center/training and teaching hospitals for full investigation of unusual causes.
- ☐ If the cause of the malnutrition has not been found, the child should then perhaps be entered into a registry, have specimens stored and be seen whenever there is a paediatrician, family medicine specialist or physician trained in the management of severe acute malnutrition and in other diseases.
- ☐ If the final referral center does not find any cause for the failure of the child, then the child is labelled as idiopathic failure-to-respond and discharged from the program after four months of treatment.

5. DISCHARGE

Discharge the child according to the discharge criteria below.

Table 13. Discharge Criteria for MAM

Category	Discharge Criteria
Cured MAM child (6-59 months)	▪ Admitted by WFL/H: ≥ -2 Z-score for 2 consecutive visits; AND/OR ▪ Admitted by MUAC: ≥ 12.5 cm for 2 consecutive visits ▪ Clinically well
Defaulted	▪ Absence for 3 consecutive visits
Non-response	▪ 4 months without reaching cured criteria ▪ Failure to respond to treatment
Died	▪ Death of child

5.1. Discharge Categories

There are five categories of discharge that can be considered when the treatment of the child is deemed to be terminated and it is important to take note of this in the Registration Book and Ration Card.

Categories:
1. Cured
2. Defaulter
3. Death
4. Non-responder

a. Cured (recovered, nutritionally recovered or discharged successfully)

- ☐ Recovered children under the MAM program reaching the criteria for discharge:
  - ➢ If the child was admitted to the program through MUAC measurement, s/he should reach a MUAC of ≥125mm (12.5cm) for 2 consecutive visits to be discharged as cured.
  - ➢ If the child was admitted through WFL/H measurement, s/he should reach a WFL/H of ≥-2 Z-score for 2 consecutive visits to be discharged as cured.

b. Defaulter

- ☐ This is a beneficiary who is absent for 3 consecutive sessions. Ideally, home visit is arranged to determine reason for defaulting, as well as to encourage readmission to the program.

c. Death

- ☐ This is discontinuity of treatment and discharge when a child who is registered in the program or within 24 hours of transfer to another health facility died from any cause.

d. Non-responder/Non-cured

- ☐ A beneficiary who has not reached discharge criteria after 4 months despite all investigations and transfer options is discharged from the program as non-responder or non-cured, and is referred for further investigation to professional health care providers.

5.2. Procedures of Discharge

Consider the following procedures when discharging a child in the MAM treatment program:

a. As soon as the child reaches the criteria for discharge (WFL/H ≥-2 Z-score and/or MUAC ≥125 mm) for two consecutive weeks, s/he can be discharged from the program.

- ☐ If cured, inform the caregiver that the child has successfully recovered from MAM and congratulate them, encouraging them to maintain this status.
- ☐ If in cases of defaulting, encourage the family to return to treatment and address the reason for defaulting. If not convinced, inform them of the discharge status.
- ☐ In case of death, express sympathy and inform the family that services for the dead child are terminated.
- ☐ In case of non-response amidst all efforts, explain to the caregiver the reason why the child is discharged from the program, and decide what to do next for the child, whether to refer to the hospital or other health professionals.

Procedures of Discharge:
- Inform caregiver the reason for discharge
- Record anthropometric measurements
- Check immunization & IYCF
- Link to other services
- Follow up for 3 months

b. Record the discharge date, WFL/H, MUAC measurements and the Type of Discharge in the Registration Book and in the Ration Card. Make sure that all necessary information is recorded.

When to discharge as cured:
For two consecutive weeks
- WFL/H ≥ -2 Z-score AND/OR
- MUAC ≥ 125 mm (12.5cm)

c. Check that immunizations are updated, counselling regarding IYCF and care practices are given and caregiver informed that the treatment is over.

d. Link the caregiver or family of the child to continuing health, nutrition and social services available in the community that the child is eligible for and which supports improvement of nutritional status.

e. Prepare a follow-up scheme of three months after the discharge.

6. LINKAGING

As the PIMAM components are interlinked with each other, so is the management of MAM closely linked with existing health, nutrition, early child development, WASH and social services where possible within the community. It is encouraged that SFP sites are within a maximum of few hours' accessibility for the beneficiaries, ideally in existing health facilities (RHU/barangay health center, BHS, day care center/child development center, government hospital) in case of immunization or treatment of illness. It is also ideal to have the MAM and SAM services to be within the same vicinity for referrals or transfers between the two modalities. This is in order for the child to continue or maintain health after recovery and prevent relapse.

Strategies for the management of MAM merge with public health interventions that promote optimal child development. These strategies include the promotion of age-appropriate breastfeeding and complementary feeding practices (IYCF), access to appropriate health care for the prevention and treatment of disease, and improved water, sanitation and hygiene practices (WASH). In addition, it is also essential to address food insecurity because it a major source of malnutrition, thus the linkages with food security and livelihood programs accessible in the community.

In summary, linkages could be formed with the following and considered by the health and nutrition workers in the community, as well as hospital staff.

- SAM treatment
- Health and nutrition programs through the Municipal/City Health Offices, District or Provincial Hospitals: IYCF, Operation Timbang Plus, EPI, MNP Supplementation
- IMCI
- Mother support groups and activities in line with nutrition
- Social welfare programs through the DSWD: Conditional Cash Transfer (4Ps), Sustainable Livelihood Program, KALAHI-CIDSS, Self-Employment Assistance-Kaunlaran (SEA-K)
- Food security, agriculture and livelihood programs by LGUs, NGOs or private sectors
- WASH promotion
- PhilHealth enrolment and coverage

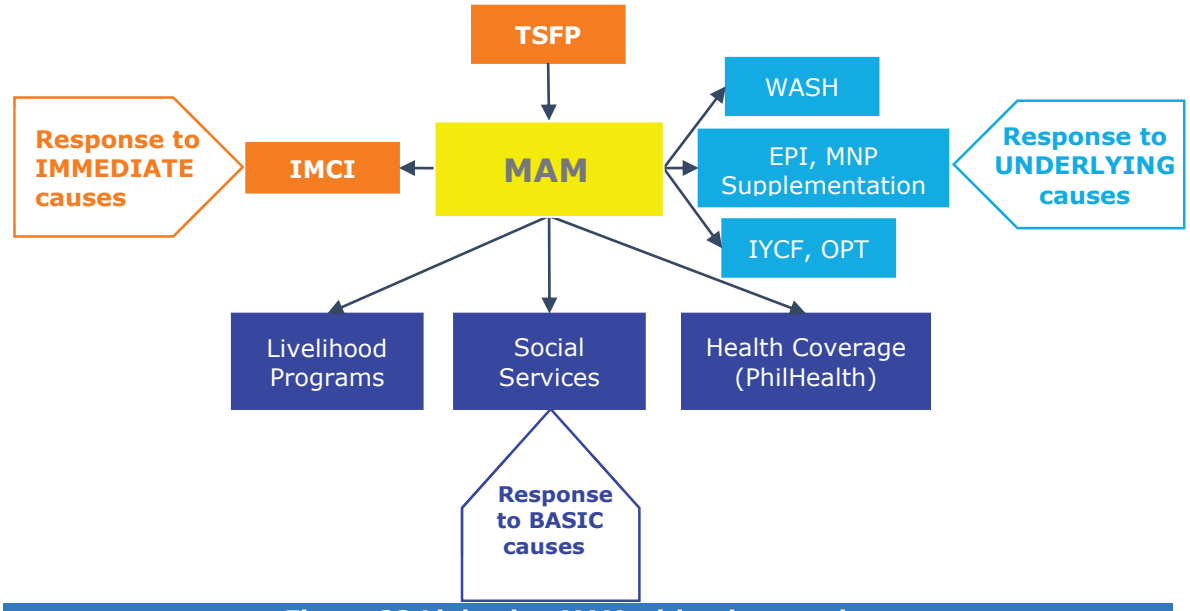


Figure 22 Linkaging MAM with other services

PART 2. OPERATIONAL GUIDELINES

DEFINITION OF TERMS

Community Mobilization:
Community mobilization includes the activities conducted in sensitizing the community about the program, screening children in the community to find cases eligible for treatment and community-based activities that support keeping the child in treatment until cure.

MUAC tape:
MUAC is an abbreviation for Mid-Upper Arm Circumference. A MUAC tape is a color-coded tape, marked in millimeters, used to measure the midpoint of children's upper arms to see if they are eligible for treatment in OTC, ITC or SFP. A measurement of less than 115mm (11.5 cm) to <125mm (<12.5 cm) indicates a child has MAM and has a mortality rate of 20.2%.

RUSF:
RUSF is an abbreviation for Ready-to- Use Supplementary Food. This is a pre-packaged supplementary food similar in taste to peanut butter and containing all of the nutrition required for the child to recover from MAM. Typically, the child eats one packet per day for approximately three months with continued breastfeeding and complementary feeding.

Emergency:
Any actual threat to public safety; an exceptional event of any magnitude that produces damage and injury demanding immediate action.

Disaster:
Any emergency, any actual threat to public safety and or public health, whereby local emergency management, services and measures are unable to meet the immediate needs of the community whether due to lack of time, capacity or resources, resulting in unacceptable levels of damage or numbers of casualties.

IYCF:
IYCF is an abbreviation for Infant and Young Child Feeding. It is a global strategy to address the protection, promotion and support of exclusive breast feeding, safe and appropriate complementary and supplementary feeding with continued breastfeeding for infants and young children.

First 1000 Days:
The first 1000 days is the unique window of opportunity between conception and a child's second birthday when the foundations of optimum health, growth, and brain development are established.

7. ADVOCACY & COMMUNITY MOBILIZATION

Prior to the implementation, it is necessary for the community to know about the program: understand the objectives, the methods that will be used to identify and treat the children, the nature of their involvement, the cost and other inputs to the program by the community, for how long the program has secure funding and how the program complements the other health and nutrition programs in the area. The information about the program must include its aims, methods, organization and the persons involved including their responsibilities and accountability.

It must be clear to them how the program will affect them and their community in practice: what will it do, who will be eligible to benefit and why they will be selected, who will not benefit or be excluded, where it will operate, who will implement it, how will people access it and what the program will do for the selected individuals. Any misunderstanding at this stage can lead to frustration and disillusionment.

Full acceptance of the program is not expected until it has already been implemented and the community sees its value. They should be sufficiently involved to take ownership of the program once it is established and shown to be effective.

There should be a step-by-step approach with continuing dialogue, feedback and exchange between the program staff and the community leaders. Such a program should never be "imposed" upon a community.

7.1. Advocacy and Social Preparation

In the community, communication activities (interpersonal and group communication, community dialogue) on nutrition should be a major part of the activities of the mother-to-mother support groups and other groups within the community itself.

The parents and caretakers, whose children become malnourished, generally come from the poorest sections of society. Many have not attended school nor can read or write. They are often unaware of the nutritional needs of children, the importance of play and psychosocial stimulation in child development, the effects of poor hygiene and pollution, the measures to take when children become ill, and the signs and symptoms of developmental and behavioural disorders major disorders in children (e.g. Anxiety Disorder, AD/HD, Autism Spectrum Disorder, mood disorders, eating disorders, or schizophrenia). Basic facts about breastfeeding and IYCF, sexually transmitted disease and HIV, reproductive health and the ill effects of some traditional practices are not known or are ignored.

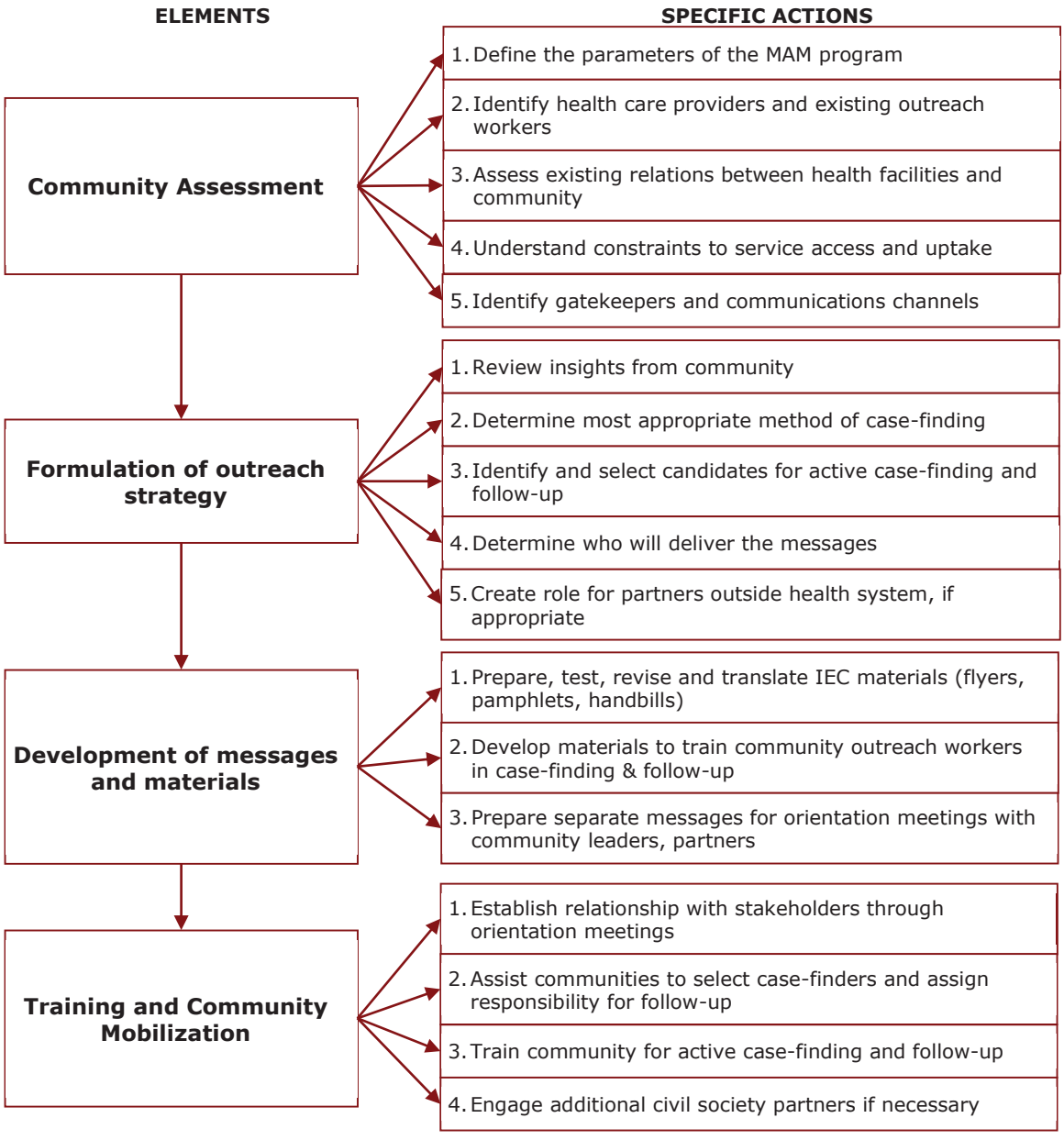
Health messages therefore should be simplified and easily remembered. The local community leaders themselves can generate or modify the messages that usually emanate from the national level. Such community leaders include the local barangay officials, church leaders, teachers, traditional healers, community volunteers and the health center staff. They themselves are more reliable in disseminating the messages.

It is also more often effective to use informal methods of passing information about the program. The information is most effectively passed at places where people gather normally, particularly the market and where women collect water or wash clothes and men gather to socialize.

The use of women's groups, schools (child-to-child or child-to-parent), basketball and sporting events, and other networks should be explored. A particularly important group to involve is the group of religious leaders of the community and passing information at places of worship can be particularly powerful.

The target groups must include the decision-makers in households, fathers, mothers and mothers-in-law in particular.

7.2. Elements of Community Mobilization



(FANTA Project, 2008)

Figure 23 Elements and Actions for Community Outreach and Mobilization

a. Community assessment

- identify barriers to service access; recognize how the community is organized, how acute malnutrition is viewed, how the services will likely be received, and how the community can best support outreach

b. Formulation of outreach strategy

- case-finding and referral as necessary steps to ensure maximized service access and uptake or coverage

c. Development of messages and materials

- community education, health promotion and disease prevention
- communicating key messages that clarify the program: who can benefit, where to access, the process of treatment, schedules of consultation, etc.

d. Training and community mobilization

- this element encourages community involvement and action, allowing the members a sense of ownership of the program, contributing to its sustainability

8. MANAGEMENT AND COORDINATION

This section identifies the organizations and people involved, as well as the roles and responsibilities, in the implementation of programs for the management of MAM in the national level to the local level.

The organization of the Philippine Integrated Management of Acute Malnutrition (PIMAM) program is important for the success of the implementation of programs for acute malnutrition, both MAM and SAM. The implementation of the PIMAM program requires organizational structure, systems development and partnership building at all levels of the health and nutrition sectors.

The PIMAM organizational structure is composed of two major units:

- National Task Force for CMAM (DPO 2011-2453), which will be the National Program Management Team; and
- Local implementers or health and nutrition service providers at different levels.

These units of the PIMAM organizational structure are dynamic. Their composition and members can flexibly change, depending on the identified needs and priorities, allowing each implementing unit to adapt the basic structure to fit local conditions and situations to better serve the malnourished population.

8.1. National Program Management Team

The National Program Management Team (NPMT) provides the local over-all direction and policy support in the implementation of PIMAM program. It is the NPMT that operationalizes the implementation of PIMAM and handles issues and concerns regarding program implementation and development.

Composition of the NPMT Lead:
DOH-Disease Prevention and Control Bureau
Co-leads:
DOH-National Nutrition Council Secretariat
DOH-Health Emergency Management Bureau
Members:

DOH-Bureau of Local Health System Development
DOH-Health Facility Development Bureau
DOH- Health Facilities and Services Regulatory Bureau
DOH- Health Promotion and Communication Service
DOST-Food and Nutrition Research Institute
DSWD-Program Management Bureau
Council for the Welfare of Children
ECCD Council
Academe and professional organizations
DSWD- Protective Services Bureau
National and International NGOs
UN agencies and developmental partners
Other relevant stakeholders as deemed necessary

The Implementers are the health and nutrition service providers who are engaged in and work with the malnourished population. As such, they may be required to take on various roles as organizers, advocates, trainers, planners, collaborators, and others. Other government agencies such as DSWD and DILG are also involved in providing services to solve malnutrition in the form of mobilization and feeding programs.

Department of Health (DOH)	▪ provide the policies and guidelines for the implementation of management of MAM as it is integrated with related programs for a holistic approach; ▪ take the lead in the dissemination of the guidelines; ▪ advocate for the adoption of the guidelines and their implementation among concerned stakeholders; ▪ provide technical inputs, as well as the necessary resources, for the operationalization of management of MAM; and ▪ establish coordination and networking with NNC and other stakeholders in planning, implementation, monitoring and evaluation of the program.
DOH-Central Office	▪ Create the National Program Management Team (NPMT) and serve as the policymaking body and leader in promoting the importance of standardized PIMAM services both during development and times of emergencies and disasters among the government and private sector including planners, decision makers, policy makers and the general public. ▪ Formulate, in coordination with members of the Health Sector, and implement policies, guidelines, protocols and standards and service packages and integrate all related programs to allow a holistic approach, not just focusing on malnutrition. ▪ Provide assistance and guidance to all implementing agencies in strengthening and financing service delivery. ▪ Provide training on the guidelines/protocol to relevant stakeholders; conduct dialogues with relevant stakeholders and review the implementation of the program. ▪ Spearhead the conduct of studies, management of information, and documentation of best practices to support and initiate evidence-based reforms.
Disease Prevention and Control Bureau (DPCB)	▪ As the NPMT lead, ensure that all of the functions set by the NPMT shall be carried out effectively and efficiently. ▪ Regularly convene the NPMT to plan and address issues and other concerns that may arise during the course of the scale-up and program implementation and provide members with the program technical and administrative updates. ▪ Generate additional membership of potential partners for an enhanced program implementation. ▪ Lead in the integration, standardization, and dissemination of indicators, tools, and recording and reporting forms. ▪ Facilitate the report (number and status of cases, interventions done, utilization of logistics) generation and analysis per facility and generate evidences and studies based on programming data and coordinate with relevant DOH Bureaus/Offices for integration. ▪ Address possible issues and concerns on procurement or production of logistical needs (RUTF/RUSF, MUAC tapes, weighing scales, height boards, standard weights for calibration- 2kg). ▪ Facilitate the development of system for inventory, transport and tracking of necessary logistics to the end-user.
Health Emergency Management Bureau (HEMB)	▪ Serve as the lead coordinating office for the Quad cluster during times of emergencies and disasters and provide support to the National Nutrition Cluster. ▪ Facilitate the coordination of response activities and information sharing among DOH Offices and Bureaus and cluster partners during emergencies.

	▪ Coordinate the augmentation of human resource and logistics in emergencies when assistance from the national government is needed. ▪ Ensure the integration of PIMAM indicators in the SPEED and HEARS reporting systems for emergencies and disasters.
Health Promotion and Communication Service (HPCS)	▪ Lead in the advocacy and promotion activities. ▪ Develop and produce appropriate advocacy and communication strategies, IEC materials and collaterals. ▪ Support the NPMT in the dissemination of the IEC materials and collaterals. ▪ Provide technical assistance in the local version translation of the IEC materials.
Epidemiology Bureau (EB)	▪ With the NPMT, facilitate the integration and consequent updating of PIMAM indicators under the FSHIS and regular reporting systems of the department. ▪ Support enhancement of surveillance systems and facilitate information sharing among DOH Bureaus and Units and cluster partners especially on cases of communicable diseases.
Bureau of Local Health Systems and Development (BLHSD)	▪ Support the advocacy for the implementation of PIMAM program in all LGUs. ▪ Spearhead the integration of PIMAM program performance indicators in the LGU scorecard and to provide technical assistance in the conduct of M&E.
Health Facility Development Bureau (HFDB)	▪ Facilitate the setting up and/or dedication of ITC areas in all hospitals with due priority for DOH Hospitals. ▪ Provide technical support to ITCs through the dietary department in all hospitals. ▪ Facilitate the organization and conduct of the capacity development for ITC.
Health Facilities and Services Regulatory Bureau (HFSRB)	• Identify specific PIMAM requirements that will be incorporated in the checklist for routine licensing applications (new and renewal of license) of health facilities and PHILHEALTH accreditation.
Knowledge Management Information Technology Service (KMITS)	• Provide technical assistance to the NPMT in ensuring the functionality, maintenance, and integration of PIMAM into existing health information management systems (iClinicsys, PHIE, FHSIS, PIDSR, disease registries, and others).
Pharmaceutical Division	• Expedite the registration of PIMAM commodities in the PNDF and issuance of clearance for commodities, drugs and medicines as needed.
Food and Drug Administration (FDA)	• Provide technical assistance in the acceptance of international and local donations, especially food and drugs. • Facilitate the acceptance and clearance of food, drugs and supplies which are necessary for PIMAM program implementation.
Health Human Resource Development Bureau (HHRDB)	• In coordination with other NPMT members, standardize the training of trainers (PIMAM, active screening, Essential Nutrition Action, Breast feeding community Initiative, mother-to-mother network group). • Develop or conduct other related learning and educational development activities.
Bureau of International Health Cooperation (BIHC)	• Facilitate the processing of international donations of commodities or grants. • Facilitate the acceptance of international donations of foods, drugs and supplies, and administer such in accordance with the terms of the grant or donation.
Health Policy Development and Planning Bureau (HPDPB)	• Review and provide technical assistance in the development of the PIMAM protocol in coordination with other NPMT members

National Nutrition Council/R/P/M/C/BNC	▪ provide assistance to the DOH-NCDPC in carrying out NPMT functions for PIMAM effectively and efficiently ▪ provide technical and management support ▪ utilize the existing PPAN strategy in enhancing the implementation of PIMAM program by incorporating screening activity through OPT and annual monitoring and evaluation of local level program implementation (MELLPI) ▪ generate support from council members to facilitate the effective and efficient PIMAM program implementation
Health and Nutrition Cluster	▪ serve as the recommendatory body to the DOH ▪ oversee the implementation of CMAM nationwide ▪ provide the technical inputs on the state of the art management of acute malnutrition in the context of the integrated management of SAM and MAM
DOH Regional Offices/DOH ARMM	▪ act as the overseer, and provide technical assistance ▪ disseminate the policies, standards and guidelines up to the barangay level ▪ develop a plan for advocacy and social mobilization and capacity/capability building
LGUs	▪ be the implementing arm and ensure the sustainability of the program ▪ be responsible for the overall operation of the MAM program ▪ plan, manage, monitor and evaluate the MAM program ▪ foster, mobilize and harmonize the different resources from various stakeholders for more efficient use of these resources

The leader in the overall operation of the program shall depend upon the technical knowledge, expertise, and ability to coordinate and collaborate, and foster partnership. Experiences from the field showed that the selection of a leader depend upon the LCEs. In other areas, the Mayor leads the implementation of MAM, assisted by the nutrition action officers.

Likewise, nutrition committees or already existing committees or project management units or technical working groups shall have the same function as the health and nutrition cluster at the national level. This multi-sectoral committee shall plan, equip SFC, RHU and BHS, and capacitate health workers, nutrition action officers, volunteers, BHWs and BNSs in order to operate the MAM program. Some of the activities of the committees are:

- Sharing of information on CMAM through workshops and presentations (advocacy and capacity building?)
- Regularly conduct coordination meetings with stakeholders
- Develop implementation plan including Training plan and schedules
- Advocacy and dialogues with the leaders of the community, the religious leaders, the Imam and other influential in the community
- Regular collection and submission of reports and maintenance of information system.

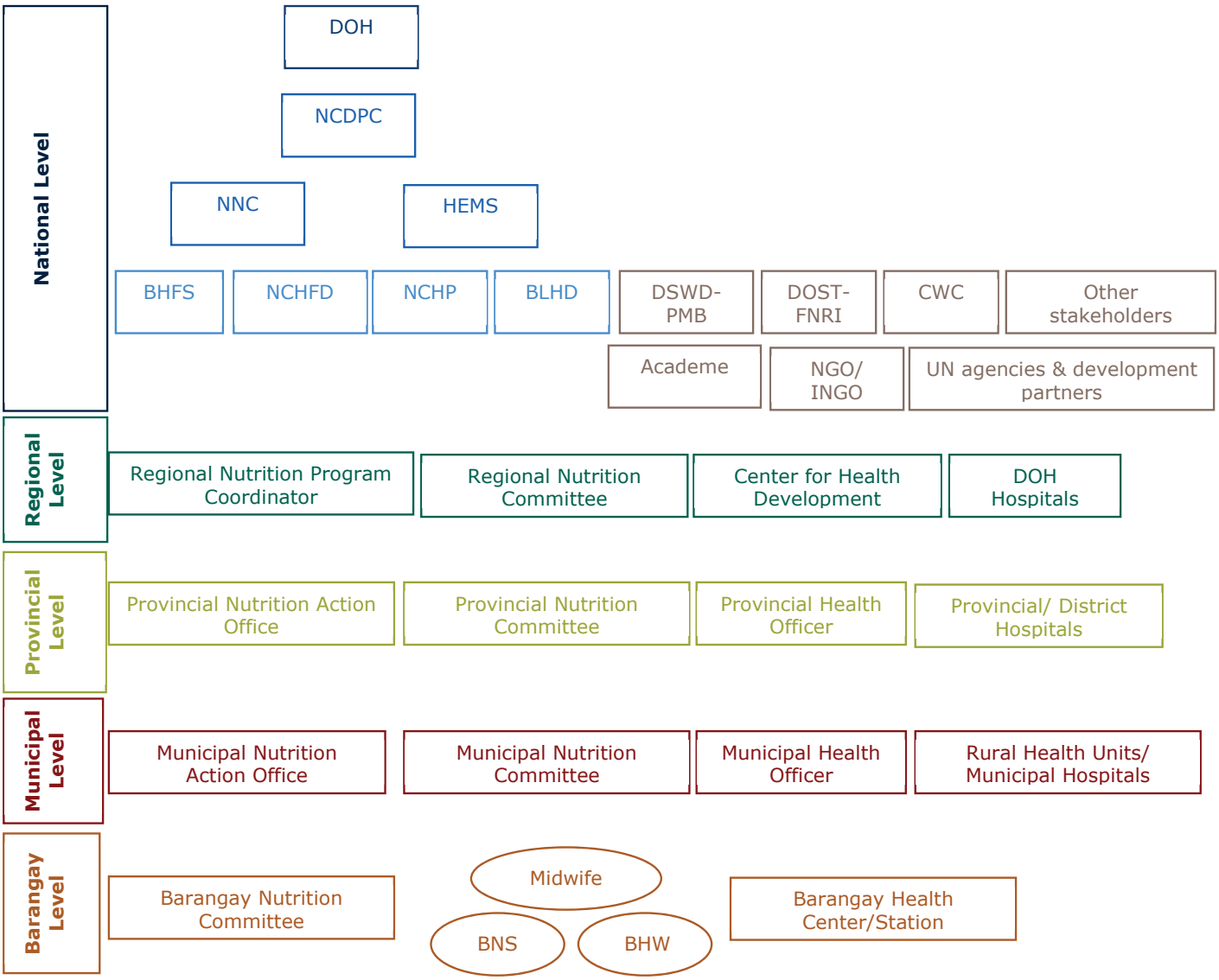


Figure 24 PIMAM coordination at various levels

8.2. Roles and Responsibilities of the NPMT

General Functions of the Program Management Team

1. Formulate, disseminate, and consistently review and make necessary updates of the plans, policies, guidelines and protocols on PIMAM and ensure the implementation of their provisions at all levels of the health and nutrition sectors.
2. Assess capacities, available resources and gaps that need to be addressed to facilitate successful integration of PIMAM in regular program and in emergency management.
3. Develop the mechanism and set standards for the supply and logistics management (planning, procurement, storage, allocation, distribution, and monitoring) of PIMAM program.

4. Develop and conduct research and documentation strategies to provide evidence-based information and identified best practices for the continuous improvement of the PIMAM program.
5. Lead in the assessment, monitoring, and evaluation of the implementation of PIMAM program.
6. Coordination, Networking and Partnerships:
    a. Define strategies and mechanisms necessary for the effective implementation and sustainability of PIMAM, which includes resource mobilization, coordination and partnership building, information management, and monitoring and evaluation.
    b. Strengthen referral system in the management of MAM.
    c. Provide technical assistance to its counterparts at the regional and local government units.
    d. Strengthen networking with the academe and professional organizations to ensure PIMAM integration in the curriculum particularly in medical and allied health courses.
    e. When an emergency is declared or anticipated, or where the nutritional status of the population is expected to deteriorate rapidly,
        i. Ensure that weekly reports of number of patients with SAM and MAM are submitted to and analyzed through the Surveillance in Post Extreme Emergencies and Disasters (SPEED) System.
        ii. Ensure that information and appropriate interventions are immediately coordinated with the regular program managers for sustainable implementation.
7. Lead in advocacy, promotion, and social mobilization as sustainable support to the PIMAM program.
8. Adapt existing training modules on PIMAM and provide the necessary training to health and nutrition program managers, implementers, frontline workers and partners.
9. Develop and ensure effective implementation of appropriate health financing strategies to provide financial risk protection particularly to those affected individuals and families and to those belonging to marginalized groups.
10. Ensure the integration of PIMAM with existing health and nutrition programs and initiatives under the Maternal, Newborn, Child Health and Nutrition (MNCHN) Strategy such as EPI, IMCI, and Promote Good Nutrition (PGN) particularly IYCF; National Tuberculosis Program (NTP); malaria, soil-transmitted helminthiasis and HIV-AIDS, management of Nutrition in Emergencies (NiE), and others.

Specific Roles and Responsibilities at different levels

Regional Offices for Health	♦ Formulates and disseminates and updates (as needed) the plans, policies, guidelines and protocols on CMAM and ensure the implementation of their provisions at all levels of the health and nutrition sectors. ♦ Develops capacities of health and nutrition human resources, infrastructure or technology, as well as identify, orient and capacitate national level trainers and technical assistance providers. ♦ Develops the mechanism, standards and procedures for the supply and logistics management (planning, procurement, storage, allocation, distribution and monitoring) of the program. ♦ Develops and conducts research and documentation strategies to provide evidence-based information and identified best practices for the continuous improvement of the program.

	♦ Leads in the assessment, monitoring and evaluation of the implementation. ♦ Defines strategies and mechanisms necessary for the effective coordination and partnership building. ♦ Strengthens referral system within the CMAM components. ♦ Develops and ensure effective implementation of appropriate health financing strategies to provide financial risk protection. ♦ Provides technical assistance to its counterparts at the regional and local government units. ♦ Strengthens networking with the academe and professional organizations to ensure integration of PIMAM in the curriculum particularly in medical and allied health courses. ♦ When an emergency is declared or anticipated, links with existing emergency coordination mechanisms. ♦ Ensures that information and appropriate interventions are immediately coordinated with the regular program managers for sustainable implementation. ♦ Leads in advocacy, promotion and social mobilization as sustainable support to the program.
Provincial Health Offices	Provide technical support and supportive supervision to the City/Municipal Health Offices in the following: ♦ Based on national guidelines, formulates/improves and disseminates and updates (as needed) the plans, policies, guidelines and protocols on PIMAM and ensure the implementation of their provisions at the provincial level. ♦ Ensures the effective implementation of the mechanism, standards and procedures for the supply and logistics management (planning, procurement, storage, allocation, distribution and monitoring) at the provincial level. ♦ Develops and conducts research and documentation strategies to provide evidence-based information and identified best practices for the continuous improvement of the program. ♦ Develops capacities of health and nutrition human resources, infrastructure or technology. Identifies, orients and capacitates provincial-level trainers and technical assistance providers. ♦ Supports the assessment, monitoring and evaluation of the implementation. ♦ Defines strategies and mechanisms necessary for the effective networking, coordination and partnership building. ♦ When an emergency is declared or anticipated, links with existing emergency coordination mechanisms. ♦ Ensures that information and appropriate interventions are immediately coordinated with the regular program managers for sustainable implementation. ♦ Leads in advocacy, promotion and social mobilization as sustainable support to the program (targeting decision makers at local level; social mobilization aimed at community level).
Municipal/City Health Offices (MHO/CHO)	♦ Provincial/City/Municipal Nutrition Council oversees all nutrition programs. ♦ Plans, implements, organizes, coordinates and controls the management of MAM program within the municipality. ♦ Overall organization of the program in the municipality/city: recruits and recommends staff appointments, in-job training, supervision, monitoring and evaluation, management of the supplementary products and routine medicines and coordination and referrals with the outpatient/inpatient facilities at municipality/city level.
NGOs/Private Organizations	♦ When needed, provides support for the management of MAM through training, coordination, IT support, advocacy, etc. and intensified implementation during emergencies and disasters.

8.3. Roles and Responsibilities of Chief Executives

Provincial Nutrition Committee (Headed by the Governor), through the PNAO, under supervision of the PHO	The Provincial Governor shall convene PNC members to discuss the need to establish PIMAM in the local health systems: ♦ Ensure effective implementation of the national and/or issue regional/provincial directives to support the LGUs in integrating the management of MAM in the health system. ♦ Disseminate the management of MAM protocol, IEC materials and collaterals to the LGUs and local health system. ♦ Lead in the capacity needs assessment of all local health systems. ♦ Ensure planning and conduct of training of trainers for health and nutrition implementers for Supplementary Feeding. ♦ Facilitate access, storage and distribution of MAM supplies from the regional level to the SFC. ♦ Facilitate the timely and quality submission of plans, statistical and stock reports from the SFCP to be submitted to the regional level through the Regional Nutrition Coordinator. ♦ Ensure the timely collection, collation, validation and analysis of submitted reports both during regular and emergency situations for planning purposes. ♦ Provide a feedback mechanism and make recommendations to the Municipality/City on the submitted reports. ♦ Monitor and evaluate the implementation of the management of MAM in the province. ♦ Conduct periodic consultative meeting and refresher course to the local health systems. ♦ Provide the RPMT with results of rapid nutrition assessment of LGUs affected by emergency/disaster.
Municipal/City Nutrition Councils (Headed by Mayor)	The Mayor shall appoint an individual to be responsible for the SAM treatment program within his/her municipality: ♦ Conduct training on active screening and nutrition education of the Rural Health Midwives (RHMs) and BHWs/BNSs at the municipal level. ♦ Conduct active screening (organized by the MNAO) involving the BHWs and BNSs. ♦ Integrate the systematic measurement of MUAC and checking for edema into the immunization (EPI) visits through growth monitoring and promotion, in the schedule for routine Operation Timbang (OPT), Garantisadong Pambata (GP), and maternal and child care consultations. ♦ Lead and monitor PIMAM implementation. ♦ Conduct of active screening and registration of eligible children. ♦ Use of the approved and updated protocols for the treatment and referral of patients. ♦ Secure availability of adequate supplies for the management of MAM from the province and properly distributed to the SFCs. ♦ Set schedule for the submission and collation of monthly stock reports and statistical data to be further submitted to the provincial level. ♦ Analyze and evaluate monthly statistical data in terms of the degree and change in nutritional state of the barangay and of the municipality and the reliability of the data collected. ♦ Provide a feedback mechanism and make recommendations on the submitted reports. ♦ Provide necessary refresher course to the management team. ♦ Utilize the existing referral system to its full extent to support the functional service delivery network.

	♦ Advocate to Barangay Captains for the formation or strengthening of Barangay Nutrition Committees in their Municipality/City.

8.4. Roles and Responsibilities of Program Implementers

MHO/CHO or MNAO/CNAO as PIMAM Manager	♦ Compile Monthly reports and submit them on time to the Municipal Medical Officer and the DHMT. ♦ Submit the monthly individual and compiled reports to the Provincial/Regional and National Nutrition Department. ♦ Collate monthly and annual reports with an overview of the program achievements and constraints including survey and screening data and budgets. ♦ Organize an annual meeting at municipal level with all involved in the municipality including community leaders and a representative from the National Nutrition Council for a presentation of the annual report and discussion of planned changes. Minutes of the meeting are submitted to provincial, regional and national levels. ♦ Facilitate activities of BNS and BHW for the PIMAM. ♦ Liaises with any other agencies or NGOs that collaborate in the government's program for PIMAM.
Midwife and Public Health Nurse as SFC Supervisor	The Midwife-in-charge or Nurse-in-charge works in coordination with the MNAO and under supervision of the MHO. ♦ Train the BHWs and BNSs on how to conduct systematic screening using MUAC tapes and examination for bilateral edema done during Operation Timbang, Garantisadong Pambata, Maternal and Child Care Consultation and other health/nutrition-related activities. ♦ Assign BHWs and BNSs their specific areas for screening. ♦ Coordinate with the BHWs and BNSs on management of MAM activities at each visit to the BHS. ♦ Where trained staff and equipment is available and staffing and caseload allow, also measure weight for height. ♦ Supervise and validate data entry in the registers and charts. ♦ Take the lead in the overall supervision including consultation of referred cases, their admission, discharge and appropriate referral of cases to the MHO and/or hospital. ♦ In collaboration with the BNS/BHW, follow-up defaulters and non-responders from treatment. Where possible, integrate these activities with the other community-based activities (OPT, GP, maternal and child care consultation). ♦ Submit monthly statistics and logistical reports to the MHO. ♦ Meet the BHWs and BNSs regularly (every two weeks) to collect community information, provide feedback and address any difficulties that arise (e.g. logistical and technical issues). ♦ Participate and facilitate community mobilization. ♦ Start routine medication as described in the guidelines. ♦ Supervise the chain management of supply.
BHW/BNS/ Community Volunteers	Through the supervision of the midwife, the BNS and BHW shall: ♦ Health Volunteers to work together in conducting screenings for acute malnutrition in applying Community-IMCI assessments of children. Refer to the midwife, PHN, MHO as needed. ♦ Perform any follow-up and home visits as agreed with the midwife. ♦ Lead in the mobilization of peer support groups, caregivers and sensitization of community leaders about the program. ♦ Encourage barangay leaders to maintain their involvement in the program and provide feedback about the program.

- Perform IYCF counseling especially on feeding practices.
- Follow-up absentees and defaulters to encourage the caregiver to attend. If possible, determine reasons for absence or default and report findings to midwife.
- Report observations of any problems such as absenteeism, defaulting, lack of progress in recovery to the midwife.
- Refer complicated cases to midwife or directly to ITC.
- Assist midwife in the chain management of supply and logistic.
- Maintain a strong link between the health center and its services, the Barangay Nutrition Committee, barangay leaders and other community groups such as people's organization, women's groups, local NGOs and hospitals.

Specifically, Barangay Nutrition Scholars shall:

- Record cases and update registry, and inform midwife of admissions, discharges and referrals.
- Consolidate and submit monthly report to the midwife or health worker supervising SFC.

9. IMPLEMENTATION ARRANGEMENTS

This section defines the practical implementation arrangements for the management of MAM.

9.1. Considerations in establishing a TSFP

The main aim of a TSFP is to manage the moderately malnourished children in a population. It also plays a role in continued support for those who have been discharged from therapeutic feeding programs for the treatment of SAM. TSFP should be implemented when one or more of the following situations occur (WHO, 2000):

- There are large numbers of malnourished children under 5: GAM rate of 10%-14%
- There are large numbers of children predicted to be malnourished: GAM rate of 5%-9% plus the presence of aggravating factors

Aggravating factors can include: (Dent & Holland, 2011)

- Worsening of the nutritional status
- Food availability at household level less than the mean energy requirement of 2100 kcal/person/day
- GFD is below mean energy, protein and fat requirements
- Crude mortality rate more than 1/10,000 per day
- Epidemic of measles or whooping cough
- High prevalence of respiratory or diarrheal diseases

Location

If possible TSFP should be situated at or near a local health facility to avoid duplication of services. If large numbers are anticipated for the targeted SFP, simple structures are often constructed a short distance away to avoid overwhelming the health facility and its usual beneficiary load.

Sites should be selected that are easily accessible and well distributed geographically to ensure that beneficiaries are within a few hour's walk to and from the site including distribution time. Site should be selected with consideration of personal safety of caretakers and children, especially in insecure areas. Climatic context e.g. whether the area is likely to flood, if there is a river to cross, etc., may dictate site changes to ensure that the SFP is accessible.

Structure

The SFC will be managed in the health centers or barangay health stations. Note that the workload of the staff of the health structures is already burdensome with many programs to administer, including treatment of the severely malnourished. It is important to take note if the health staff have large numbers of children attending for supplementary feeding or MAM treatment (note there are

normally about 10 MAM children for each SAM child), their facilities and staff become swamped so that all the essential health programs suffer.

Distributions can be run by the SFC staff on a weekly or bi-weekly (every two weeks) basis. Weekly distributions have the benefit of more frequent follow up on health and nutrition status, while biweekly distributions entail less opportunity cost for caretakers. **Monthly distributions are usually not possible as the premix given turns rancid after 2 weeks.**

All equipment and supplies, including food commodities, can be kept and managed at the health centers if there is capacity, or transported by mobile teams in a strong equipment box. Alternatively, equipment and supplies could be stored in community stores where these exist. In addition, transport is needed for the small number of children who have to be referred.

Staffing

There is no need to have clinically trained staff (doctor or nurses). MAM treatment can be run by Midwives, BNSs and BHWs for two reasons:

1) the sick MAM child should be treated as a sick normal child following the IMCI protocol and guideline; and
2) the MAM child only needs to receive a regular periodical supplement of food, and counseling, to recover

Many times in emergencies, healthcare is lacking and SFPs are run by mobile services. It is important to assess the context and what is available when planning the organization and set up of SFPs and include additional medical staff to the SFP team and essential medical supplies if no health services are available. In addition, an overall supervisor is needed to manage the teams and ensure a functional network for referral.

MAM Treatment Supervisor

- Prerequisite: trained in the MAM treatment protocol
- Activities:
  - Manages the food and non-food items (stock control)
  - Prepares monthly reports
  - Manages human resources
  - Supervises MAM treatment
  - Organizes health and nutrition education/counseling

BNS, BHW or Community Volunteers

- Prerequisite: trained on the measurement techniques, admission and discharge criteria for the PIMAM program and the MAM treatment, and the procedures for patients who failed to respond to treatment
- Activities:
  - Does the anthropometric measurements (weight, length/height, MUAC) and edema check – there should be at least two staff members, particularly in measuring length of an infant or child
  - Checks for any medical problem, vaccinations, and refers child immediately to the nearest health center if medical problem is identified
  - Admits the child according to admission criteria
  - Explains to the mother/caregiver the management of MAM
  - Helps in the preparation, organizing and supervision of individual rations
  - Distributes the prepared ration to the child or caregiver
  - Gives health and nutrition education sessions
  - Registers the child, applies the criteria of admission discharge and failure to respond

- Finds the defaulters and encourages them to come back
- Identifies defaulters and non-responders, reflects it in the record book and reports to the supervisor

The SFP requires at least one health center staff to perform medical assessment on children who are sick or those who need further evaluation and management of their condition. This staff could either be a doctor, staff nurse or midwife trained on IMCI.

If the number of MAM cases is low, the health center staff can do the screening, admission and follow-up of MAM cases. They may be assisted by the BHWs and BNSs who are trained to do anthropometric measurements and other tasks.

Tools and Materials

For measurements
- ☐ Scales, length board/height board, MUAC tape (see Annex 4)
- ☐ WFL/H charts (see Annex 9)
- ☐ CGS tables

For registration
- ☐ Posters for admission and discharge, failure to respond criteria
- ☐ Registration book (see Annex 10)
- ☐ Key Messages about the products (RUSF/porridge) in local languages
- ☐ Ration Card, ECCD cards (see Annex 11 and Annex 12)
- ☐ OPT forms for master-listing
- ☐ Monitoring tools (see Annex 14 and Annex 15)

For health-nutrition education
- ☐ Cooking materials
- ☐ Posters on education, health promotion and disease prevention with other materials

For ration preparation and distribution
- ☐ Supplemental ration supplies (with secure storage facilities)
- ☐ Salter scale (50kg), calibrated – same scale for admission and discharge
- ☐ Calculator
- ☐ Measuring cups/scoops
- ☐ Soap for washing utensils
- ☐ Buckets/Basins

Routine medicines
- ☐ Vitamin A capsules
- ☐ Albendazole or Mebendazole tablets
- ☐ Micronutrient powder sachets
- ☐ Iron tablets
- ☐ Safe drinking water and drinking cups

Storage equipment
- ☐ Wooden palette for stacking

9.2. Organization of Services

It is crucial to have an efficient and organized distribution of commodities to ensure smooth and rapid flow of beneficiaries. Beneficiaries should not have to stay for more than two hours.

In busy health centers, there are certain specified days or certain time in a day for specific health services. Wednesdays are usually immunization days, or Thursday as prenatal days. It is possible to have a scheduled day for the distribution of food commodities.

A flow of services wall chart is usually displayed, and signage posted in specified areas visible to patients who come to the health center. The anteroom is usually designated as the area for registration, issuance of health records. Vital signs recording, anthropometric measurements are usually done in the area where the weighing scale and height boards are located. The midwife or the nurse may do the triaging so that very sick children or malnourished children in queue are given immediate attention. The child is then referred to the doctor's room for more in-depth assessment

and treatment. An assistant nurse or midwife is in charge of dispensing the medicines and providing health education and instruction on how to treat her child at home and when to return for follow up.

If there is a large number of MAM cases, SFC strategically located nearby shall be established. Community support group shall assist in managing the crowd and ensure smooth flow of beneficiaries. The volunteers should be polite to the mothers or caregivers.

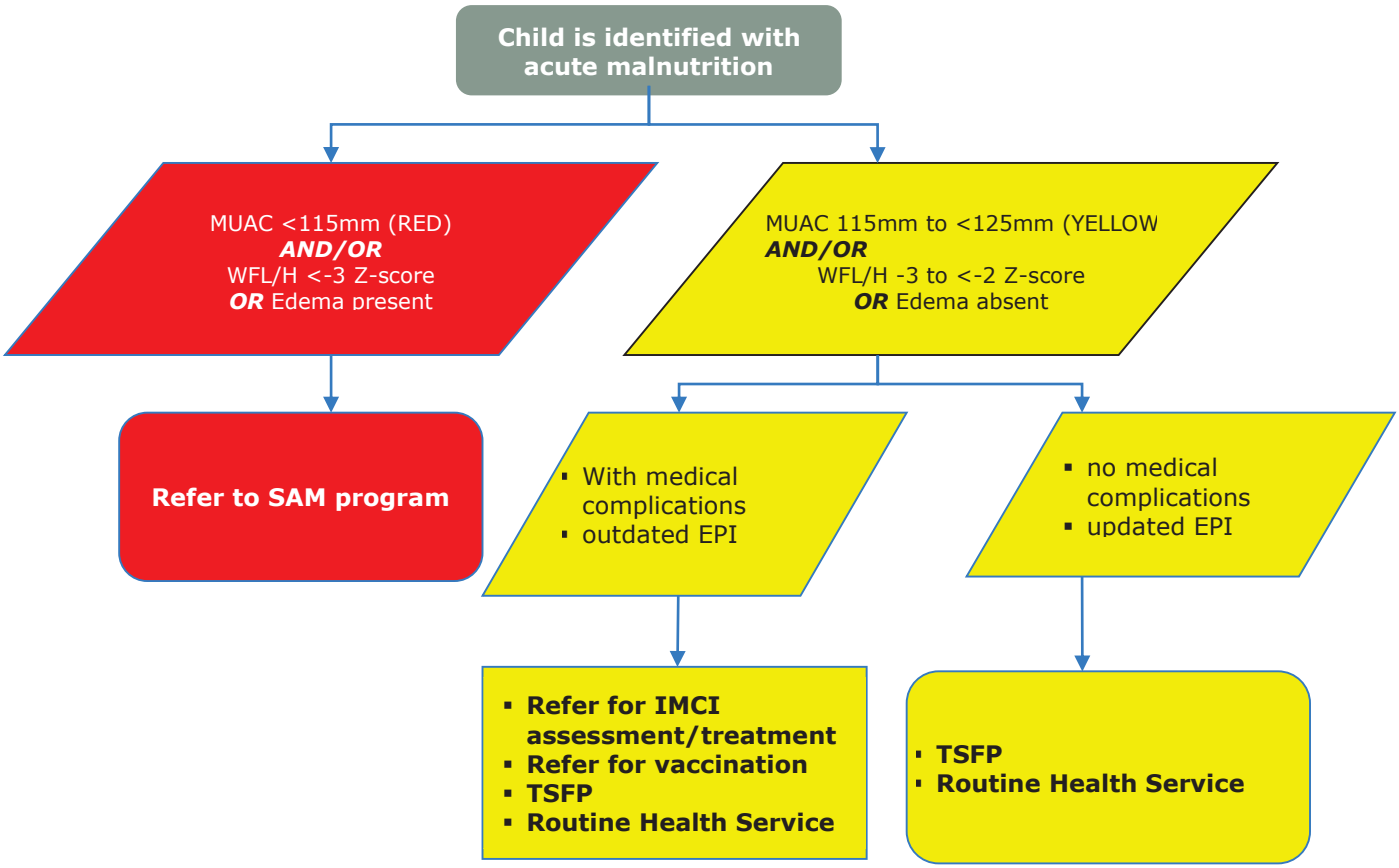


Figure 25 Identification, intervention and referral for MAM

10. LOGISTICS AND SUPPLY MANAGEMENT

Basic Requirements on Logistics and Management of Supplies

These are the policies in setting up a Supplementary Feeding Program based on the administrative order for national guidelines on acute malnutrition (DOH, 2015).

1. The overall management of all drugs, supplies, therapeutic and supplementary commodities, and diagnostic supplies, and the development and dissemination of corresponding guidelines and protocols shall be the responsibility of the DOH (with the support of Materials and Management Division) and the local government units.
2. The local government units shall ensure that policies and guidelines for treatment supplies management are implemented properly at their level. They shall also actively participate in the monitoring and evaluation of the implementation of these policies and guidelines.
3. Quantification and ordering shall be based on utilization rate, projected increase of cases due to strengthened case finding and provision of buffer stocks for emergencies. Buffer stocks shall be maintained at 20% to be lodged at the DOH Regional Offices or Provincial Health Offices as needed.
4. Medicines and nutrition supplies shall be stored under appropriate conditions and accounted for through proper recording and reporting. Stock status shall be reflected in the National Online Stock Inventory Reporting System (NOSIRS).
5. The DOH Regional Offices, PHOs, and CHOs shall ensure that drugs and diagnostic supplies are promptly distributed to the next level. The DOH Central Office shall deliver the commodities to the DOH Regional Offices. DOH Regional Offices shall deliver the commodities to the PHOs/CHOs. PHOs and CHOs shall ensure the prompt delivery of the commodities to RHUs/Hospitals which shall serve as the Point of Care under the Service Delivery Network.
6. Disposal of expired and damaged medicines and nutritional supplies shall follow government rules and regulations.
7. The DOH Regional Offices shall be responsible for the reproduction of all forms used in the treatment of SAM to be distributed to PHOs/CHOs, RHUs, and hospitals.
8. LGUs shall set aside funds for the emergency procurement of sufficient quantities of drugs and nutrition supplies in times of impending shortage to ensure continuous availability of treatment commodities at their service delivery points.

10.1. Screening/Waiting Time in the SFC

- Ideally adequate shade (trees, simple shelters made from local materials), a supply of drinking water and somewhere for caretakers and children to sit (benches or mats) helps keep the situation calm and more manageable. Latrines should be available. Health education can take place while caretakers are waiting their turn for assessment.
- During the distribution, the waiting areas should be checked regularly to identify ill, weak or severely malnourished individuals requiring immediate care or transfer to therapeutic care prior to routine medical screening for beneficiaries.
- A screening system outside the gate should be established to assess new beneficiaries for MAM and to avoid potential beneficiaries who do not meet the admission criteria from waiting too long without receiving anything. New arrivals in the evacuation center should be screened during registration. Sick children attending health clinics should also have their nutritional status assessed for potential referral to the SFP.

- Ideally a check should be made to see whether beneficiaries have access to other food distributions. The list of beneficiaries admitted to the SFP can then be cross-checked with other food aid agencies involved in GFD. Sometimes if there is no GFD, an additional weekly family ration can be distributed, in particular in the case where several children from the same family are admitted to the SFP.

10.2. Procedures of Distribution

- Once inside the waiting area, the HEPO or the nurse or midwife shall conduct health promotion activities, like audiovisuals, use of flipcharts of counseling cards. These can also include cooking demonstrations or instructions on how to prepare porridge, especially for new admissions.
- Weight is measured at each distribution and recorded on the card. MUAC measurements should be re-checked regularly and height taken once a month. If used, target weight must be recalculated each month when height is updated.
- Attendance is recorded in the registration book and the individual beneficiary card completed.
- Registrars should look at the individual weight progression and calculate whether the beneficiary is ready for discharge, has deteriorated and requires transfer to a therapeutic center, or is not responding to treatment.
- Clinical staff members should perform a medical assessment, including assessment of bilateral pitting edema, review of weight progression, and administration of systematic medicine under observation (see section 10.2 or referring to TFCs). If situated near a health center sick children can be referred for services, but often in emergencies SFP teams keep a basic kit of essential medicines, including antibiotics, antimalarial, ORS, ointment for skin or eye infections etc.
- Beneficiaries receive the ration and then leave the center with clear instructions about the next visit.
- The main difference in organization between take home and on-site feeding is that beneficiaries usually remain at the SFP for several hours daily as they consume meals on site. Meals are taken under direct observation.

10.3. Storage and Management of Commodities

Complete storeroom stock card as food goes in or out of the storeroom and fill in the monthly report the stock balance each month.

Deliveries

- Check the commodities on delivery: the condition of the goods and the packaging and labelling.
- Verify on the waybill the contents of the delivery and certify the receipt of the delivery.
- Indicate (in writing) any problems or inconsistencies between the actual delivery and the waybill. Retain one copy of the waybill and return one copy to the driver.

Storage of Food & Non-food Commodities

Ensure that the storeroom is:

- sufficiently big (1m x 2m or 1m x 3m) to store one month's stock of food commodities
- easily accessible by car in any season
- well ventilated and sheltered from the rain
- regularly cleaned/disinfected
- protected from rodents and insects

- secure – under lock and key

Commodities

Verify that:

- food commodities are separated from the non-food items
- food products are put on wood-pallets 30cm from the wall
- split bags are separated from the others
- food commodities are labeled properly (e.g. not for sale, halal, should specify for 6 months old and above)

If the storekeeper goes on leave, the key and stock must be handed over to a relief storekeeper. Even though the storekeeper is personally responsible for the stock, it is unacceptable to leave the store locked when beneficiaries arrive for treatment.

Stock and pipeline problems

There should be sufficient stock of nutritional products for at least two months' program operation (anticipated numbers of children taking seasonality into account) at each of the SFCs. **To compute for supplies, Get the SAM and MAM cases of the previous year, multiply with the required quantity for the year and add 15%-20% as buffer.**

If a disruption of supply is anticipated, then it is imperative that the beneficiaries are informed well in advance and the organizers of the program do not wait and "hope "that further supplies will arrive in time. Many programs have lost all credibility with the community because of sudden failure of any therapeutic products to be available when they attend an SFC. Defaulting rates become very high and the whole program falls into disrepute; elsewhere, RUTF may be inappropriately used for the MAM children leading to failure of sufficient supplies to treat the SAM children.

In general, communities will appreciate being told well in advance (at least one month) if a rupture of the pipeline is likely.

10.4. Maintaining Records

- If admission criteria are met, the beneficiary is registered for admission. Client records are filled out for each person and are kept by the guardian or caregiver. The same information is kept in a registry which stays at the health facility or center (see Annex 10). Some organizations keep the card at the center but it is preferable for the family to keep it in case they move areas or to another center to preserve individual information, including immunization status and routine medication.
- Program with high numbers of cases have also used identification bracelets attached around the wrist or ankle with the registration number and center abbreviation attached if resources allow. This can speed up registration and help avoid double registration of families in numerous centers, although is not fool proof as they can be removed and given to another child.

10.5. Financing

The Local PMT shall be accountable in advocating for the local government to pass a resolution on budget allocation for commodities, medicines and supplies needed for the management of MAM.

11. MANAGEMENT OF MODERATE ACUTE MALNUTRITION IN C-MAMI TOOL

The community management of uncomplicated acute malnutrition (C-MAMI) tool was developed by the Emergency Nutrition Network (ENN) and the London School of Hygiene and Tropical Medicine (LSHTM) to fill in the gap in the programming guidance of non-emergency and emergency cases of malnutrition. It is a short and practical tool to support community based management of uncomplicated cases of acute malnutrition in infants under six months of age. The tool was modelled after the Integrated Management of Childhood Illness (IMCI) framework (ENN, 2016).

The tool is divided into three parts: Assess, classify and act (manage) for both infants under 6 months of age and the mother. The assessment of C-MAMI is outlines in two section: C-MAMI Assessment for Nutritional Vulnerability in Infants aged <6 months (Infants) and C-MAMI Assessment for nutritional Vulnerability in Infants aged <6 months (Mother). The location of the C-MAMI services will vary depending on the context and will be determined by staff capacities. The tool assesses both the infant (<6 months of age) and the mother.

The health and well-beings of the mother is also assessed since they directly affect the infant.

To determine the appropriate management, the following are the assessment steps required by the tool:

Infants
1. Triage: Check for general clinical danger sign or signs of very severe disease **2. (A)nthropometric/Nutritional Assessment** **3. (B)reastfeeding Assessment** **4. (C)linical Assessment**

Mother
1. (A)nthropometric/Nutritional Assessment **2. (B)reastfeeding Assessment** **3. (C)linical Assessment** **4. (D)epression/Anxiety/Distress**

Ideally, Priority 1 and Priority 2 classification will be enrolled in the C-MAMI program, however, in the absence of resources, the program will focus on the infants with Priority 1 or infants with higher risks in 'pink' and yellow' zone.

The management of moderate acute malnutrition in C-MAMI falls under Anthropometric/Nutritional Assessment of Infants. The Moderate acute malnutrition/SOME nutritional risk classification is tagged as Yellow 2 or Priority 2 in C-MAMI. The two full assessment sections of the C-MAMI tool for both infants and mothers can be found in Annex 18. For more information about the C-MAMI tool, please refer to http://www.ennonline.net/c-mami.

Table 14 C-MAMI Assessment for Nutritional Vulnerability in Infants aged <6 months: Infants (Moderate Acute Malnutrition without complications)

ASSESS	CLASSIFY		ACT (MANAGE)
Anthropometric/Nutritional Assessment			
CHECK FOR ACUTE MALNUTRITION LOOK AND FEEL: Look for signs of acute malnutrition • Look for pitting edema of both feet • Measure weight and length and determine weight-for-length (WFL) z-score where calculable • Record Mid Upper Arm Circumference (MUAC) for all infants (for on-going and future studies)5 • NOTE: clinical assessment for visible wasting is not a reliable substitute for anthropometry and will result in cases being missed. It should only be done where length is <45cm and WFL z-score cannot be calculated. ASK: • If growth monitoring card is available. If yes, note: • Birth weight • Current growth centile • Growth trend if previous data available • Growth velocity and growth pattern (e.g. whether tracking along or falling across centile lines) If no, record: • Weight for Age (W/A)	**Moderate Acute Malnutrition/SOME Nutritional Risk** • WL Z >= -3 to <-2 **AND** **No clinical complications**	***Yellow 2:*** **UNCOMPLICATED MODERATE ACUTE MALNUTRITION**	**If resources allow:** **• C-MAMI enrolment: Priority 2** • Detailed assessment of underlying cause(s) of malnutrition + tailored action to address these • Plot & appraise growth chart for monitoring progress **If programme capacity limited** • No enrolment for time being • General nutrition/feeding advice • Plot growth chart to aid review • Review in 1-2 weeks to check whether has got better or worse (in which case enrol/step-up)

12. MAM IN EMERGENCIES

The conceptual framework shown in Figure 1 illustrates the causation of malnutrition including primary and underlying causes. In emergencies, essential services and support structures are often greatly disrupted, increasing the malnutrition risk to the population. Once malnourished, an individual's ability to manage infection is compromised exacerbating the effects of potentially fatal diseases such as malaria, measles, diarrheal disease, pneumonia, HIV and AIDS. MAM needs to be addressed in the emergency context both to support a child's right to sufficient food, growth and well-being and to prevent more serious illness and death.

12.1. Nutritional Situation Assessment for Emergencies

In order to determine if and how a feeding program should be implemented, it is necessary that an assessment is carried out to give information on the current nutritional situation and the presence of aggravating factors (absence or lack of general food ration, presence of epidemics or diseases, crude mortality rate) that can exacerbate nutritional insecurity. Minimum information needed to consider an SFP are:

- Pre-crisis prevalence rates of MAM, food insecurity, disease, access to health services and micronutrient deficiencies
- Likely scenarios of change in the nutritional status of children under five based on a food security assessment
- Understanding the seasonal dynamics and projecting forward regarding health and social support available during the emergency
- Social support networks and psychological stress on caretakers
- Trends of disease and malnutrition (past and projected)
- Likelihood of food sharing
- Variation in prevalence rates within a given geographical area and the implications these would have on type of intervention and coverage
- Capacity to implement programs

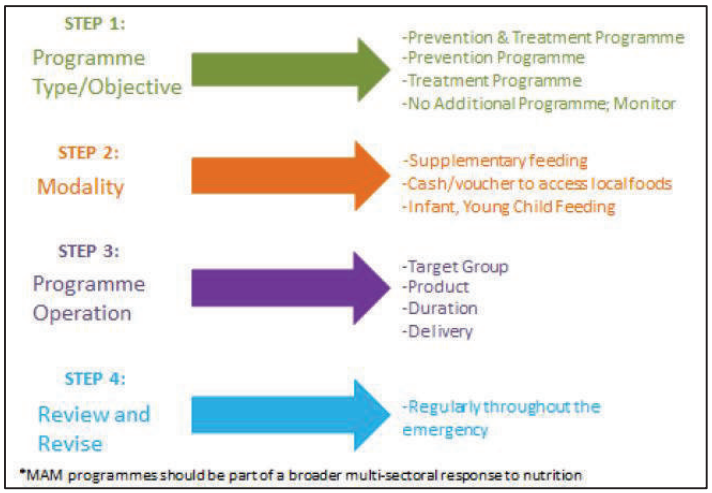
SFP is ideally implemented when nutrition/anthropometric surveys have been conducted and where the underlying causes of malnutrition are simultaneously being addressed. An SFP should be implemented alongside an adequate general emergency food ration to be effective (Global Nutrition Cluster, 2008). It is important to determine which primary type of SFP will be best suited for a given situation. TSFP mainly aim to support MAM cases when there is an alarming rate of GAM among children or prevalence of GAM with presence of aggravating factors. BSFP, on the other hand, aim to prevent widespread malnutrition and to reduce excess mortality among at-risk group by distributing supplementary food to the entire population.

12.2. Decision Making for Emergencies

The MAM Decision Tool for Emergencies (GNC, 2014) was developed by the MAM Task Force of the Global Nutrition Cluster to serve as a tool and guidance for the prevention of acute malnutrition and treatment of MAM in emergencies. The primary objective of MAM programming is to prevent mortality and morbidity, reduce the incidence of SAM and acute malnutrition that often occurs in emergency. While this tool is intended as interim operational guidelines to address MAM in emergencies, the SC plans to use this guide to test whether this will also be applicable for non-emergency settings.

Different types of information and data are required in making decisions during emergencies:

- ☐ prevalence of GAM in the affected area
- ☐ information on the nature and severity of the crisis
- ☐ baseline health data in the areas affected and expectations of the crisis impact on illness
- ☐ food security situation and expectations of crisis impact on food security
- ☐ estimates of displacement and population density



(GNC, 2014)

Figure 26 MAM Decision Tool Steps for Emergencies

The Decision Tool has devised a process of determining the appropriate intervention to implement for the management of MAM in emergencies.

STEP 1. Determine the appropriate type of program for the current situation. Choose from (a) prevention and treatment of MAM, (b) prevention only, (c) treatment only or (d) no additional intervention than strengthening IYCF and monitoring the situation. This can be determined by performing a situational analysis, risk deterioration assessment, and coming up with a program recommendation.

Risk of Deterioration	Analysis	Score	Sum Score	Risk Category
Increased morbidity (Acute watery diarrhea (AWD), measles, ARI)	High	3		Score 7-9: High Score 4-6: Medium Score ≤ 3: Low
	Medium	2		
	Low	1		
Food insecurity	High	4		
	Medium High	3		
	Medium Low	2		
	Low	1		
Significant population displacement	Yes	1		
	No	0		
Population density	Yes	1		
	No	0		

(GNC, 2014)

Figure 27 Risk deterioration assessment

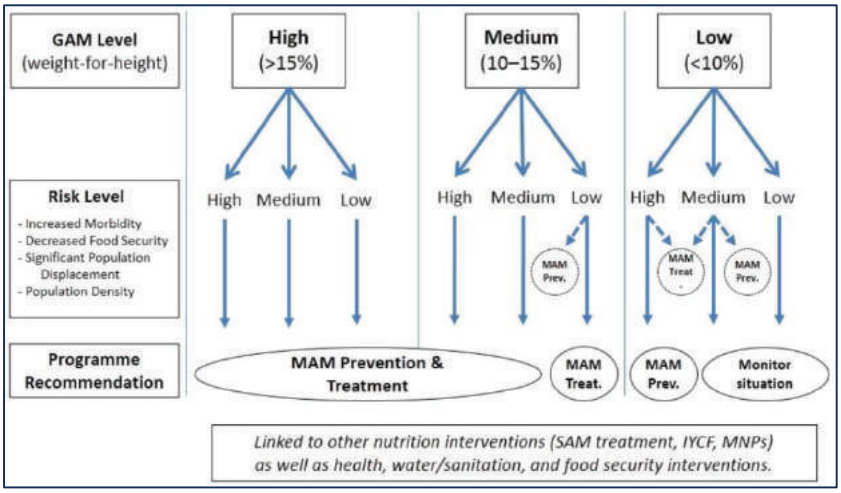


Figure 28 Determining program type for management of MAM in emergency

STEP 2. Identify the modality and operation of response in managing MAM during emergencies.

Supplementary Feeding Program. **BSFP** is usually the modality used for preventing or treating MAM in situations where there is high prevalence of MAM, chronic malnutrition, or food insecurity even before the emergency. **TSFP** is ideally the choice for treatment of MAM through the direct provision of nutritious food supplements and routine medical treatment.

Cash/Voucher Program are considered standard programming options in emergency food security or livelihoods programs for increasing household assets and flexibility in adapting to shocks. For emergency situations, this can be considered where the food and nutrient availability is good, markets have not been interrupted and caring practices can be sufficiently maintained or improved.

SBCC/IYCF Support is important in any emergency response. In some circumstances where SBCC (Social and Behavior Change Communication)/IYCF support alone is the appropriate response – for instance, when markets are functioning, age-appropriate food is available and households have sufficient income to purchase the nutrients and nutrient density required by infants and young children.

STEP 3. Establish program operation details.

Select target group for the intervention. The standard target groups are malnourished children 6-59 months of age, malnourished pregnant and lactating women 6 months postpartum (PLW) and malnourished people living with chronic illness (e.g., HIV, TB).

Select the right specialized nutritious food. Selecting specialized food for management of MAM is linked with the contexts of emergency and food security,
and the risk group to be targeted. Three main factors to consider are: (1) objective of the intervention and target group, (2) household's ability to cook, and (3) cultural practices and food preferences.

Estimate the duration, timing and cessation of the intervention. Duration may vary with range from 1 to 4 months after onset of emergency. Scale-down of programs in managing MAM is generally considered when GAM rates fall below 5% and no aggravating factors exist. Phase out can be considered when there is very low number of cases of MAM.

Determine the delivery mechanism. There are a number of factors to consider in planning the delivery of MAM treatment programs, such as access to the population, scale of the emergency (e.g. total area affected, etc.), implementation capacity and population density. Decision should come up with the number of delivery or treatment sites, frequency of delivery of services or commodities, and manner of distribution. It is important to keep in mind that sites for management of MAM require large areas for waiting, measuring, monitoring and providing the food supplement and it does not require health care staff for

implementation. As much as possible management of MAM should not drain the existing health system.

STEP 4. Review and revise. The decisions made with this tool may require adaptation after certain time intervals, be it because the emergency has expanded, new risk factors have emerged, the time horizon needs to be extended, new nutrition interventions are included in the nutrition response, etc.

12.3. Considerations in Establishing MAM Program in Emergencies

During emergencies and disasters, implementers should consider the following in setting up PIMAM Program:

- Where PIMAM is implemented, a support for BNS/BHW in screening for cases of SAM in the community is needed, aiming to augment rather than replace current services; volunteers or assistants may provide ancillary help at the BHS/RHU.
  - Provision of mobile teams for communities unable to access health care and/or the establishment of temporary sites in camps where health centers and/or health staff are affected by disaster.
  - Provision of additional resources such as medicines and RUSF; buffer stocks from regular program may be used to ensure that children who need it are provided the service immediately.
  - Implementation of IYCF in emergency services.
  - Temporary medical sites if hospital services become inaccessible.
  - If TSFP is available, ensure proper screening and referral of children with MAM.
- Where no treatment service is currently implemented, the implementation will likely require the assistance of neighboring local government units or local or international NGOs with previous experience on PIMAM. Coordination of programming for the treatment of MAM shall be done through the relevant local authorities and the Nutrition Cluster.
  - The focus is on achieving high treatment coverage and early admission to treatment before complications can develop. As such, community mobilization and SFP shall be prioritized.
  - Before implementation, the emergency program must have a well-defined and sustainable 'transition strategy'.

12.4. Program Linkages in Emergencies

Preventing and addressing undernutrition requires multi-sectoral action and there are other program linkages for MAM in emergencies including interventions to manage SAM, strengthen IYCF, address health, water, sanitation and hygiene and address food insecurity. Illness, food insecurity and suboptimal feeding practices influence the effectiveness of SAM and MAM interventions, therefore, any emergency nutrition response should be coordinated with these other programs when appropriate and advocate for them when necessary.

Basic linkages for managing MAM in emergencies include:

- Management of SAM
- Infant and Young Child Feeding (IYCF)
- Water, Sanitation and Health (WASH)
- Food Security and Livelihood Program

13. PROGRAM MONITORING AND DATA MANAGEMENT

Monitoring is assessing the progress of program implementation. This is done on a regular basis and more frequent than doing evaluation. Evaluation is not just assessing the degree to which the program objectives are being met but also to understand what factors affect access and uptake of the services. The purpose of evaluation is to initiate action or modify actions to ensure the greatest number of individuals able to benefit from the program. This relies on information gathered through individual assessment. SFP performance and effectiveness can be assessed using a range of standard indicators.

The management of MAM requires appropriate monitoring of interventions and of the overall situation. This is important to ensure quality control of the program, that conditions are not deteriorating (to affect incidence and case load coverage), and evaluations should be scheduled to assess program effectiveness and impact in line with best practice standards. Indicators to be monitored for all SFPs include mean length of stay (LoS), average weight gain, recovery, death, defaulting, and non-response rates. M&E tools include individual record cards, ration cards, referral slips, tally sheets, monthly statistical reports and commodity distribution records.

Table 15. Monitoring and Evaluation Indicators and Standards

Indicators	Definition/Calculation	Standards	Means of verification
MAM Prevalence	No. of children with MAM over the no. of children screened (Only if an acceptable proportion of children is screened, usually at least 80%) **OR** Prevalence estimates based on anthropometric surveys (e.g. NNS)	Depending on program goal (reduction of prevalence, preventing increase in prevalence, etc.)	▪ OPT (assuming MUAC and WFH/L are measured) ▪ Nutrition Surveys ▪ Mass screening of children using MUAC ▪ Passive master-listing
Cure Rate	Proportion of children discharged cured, out of total discharges $MAM\ Cure\ Rate\ (\%) = \frac{\#\ of\ Cured\ MAM}{Total\ \#\ of\ Discharged\ MAM}\ x\ 100$	More than 75%	
Default Rate	Proportion of children recorded as absent for 3 consecutive sessions, out of the total discharges $MAM\ Default\ Rate\ (\%) = \frac{\#\ of\ Defaulted\ MAM}{Total\ \#\ of\ Discharged\ MAM}$	Less than 15%	▪ Registration Book ▪ Ration Card

Table 15. Monitoring and Evaluation Indicators and Standards			
Indicators	**Definition/Calculation**	**Standards**	**Means of verification**
Death Rate	Proportion of children who died while in treatment, out of total discharges $MAM\ Death\ Rate\ (\%) = \frac{\#\ of\ MAM\ Deaths}{Total\ \#\ of\ Discharged\ MAM}\ x\ 100$	Less than 3%	
Non-responder Rate	Proportion of children who had been referred for medical investigation and are discharged non-cured after 4 months of treatment, out of total discharges $MAM\ Non\text{-}responder\ Rate\ (\%) = \frac{\#\ of\ MAM\ Non\text{-}responders}{Total\ \#\ of\ Discharged\ MAM}\ x\ 100$	Less than 10%	
Mean length of stay	Sum of length of stay in the program for recovered children divided by number of children cured or treatment cards in the sample	Minimum of 2 months Maximum of 4 months	
Average daily weight gain	Sum of weight gains in a sample divided by number of children cured or treatment cards in the sample	≥ 3g/kg/day	

Where: Total # of Discharged MAM = cured + defaulted + dead + did not recover

13.1. Indicators and Standards for Monitoring and Evaluation

The following program performance indicators measured by implementers and program managers on a monthly basis will be the focus in terms of monitoring the achievements of the management of MAM:

Cure Recovery Rate – this is the number of children 6 to 59-month old with MAM who have recovered and are discharged as cured in proportion with that of the total number of discharged MAM cases.

Default Rate – this is the proportion of children 6 to 59-month old with MAM who are recorded as defaulters out of the total number of discharged MAM cases. Defaulters are admitted MAM cases who are absent for three (3) consecutive sessions, thus discharged.

Death Rate – this is the proportion of children 6 to 59-month old with MAM who died while in treatment out of the total number of discharged MAM cases.

Non-Responder Rate – this is the proportion of children 6 to 59-month old with MAM who are considered non-responders out of total discharged MAM cases. Non-responders are those who have been referred for medical investigation and are not reaching the discharge criteria

after 4 months of treatment. (A child without recovery or relapse; a child who does not fulfill any criteria for recovery or deterioration)

Take into consideration that the number of discharged is the sum of children cured, died, defaulted, transferred (from one SFP to another), and non-responder.

Table 16. SFP Sphere standards

TSFP Indicators	Acceptable	Alarming
Cure rate	>70%	<50%
Death rate	<3%	>10%
Defaulter rate	<15%	>30%
Non-recovered rate	<10%	
Average length of stay (in the program)	<8 weeks	>12 weeks
Average daily weight gain	≥3g/kg/day	
Coverage	50% (rural) 70% (urban) 90% (camp)	

13.2. Data Management

Data Collection/Tallying

- ❖ At the end of the distribution, SFC staff should note the number of new admissions, absentees, defaulters, cured and the number of rations given. Outreach visits should be arranged to trace absentees and defaulters.
- ❖ Simple tally sheets can be used to help calculate numbers of new admissions and discharges to help with monthly reporting (Annex 14), which is performed by the SFC manager.

Materials:

- ☐ Calculator
- ☐ SFP Registration Book (Annex 10)
- ☐ SFP Monthly Report (Annex 15)
- ☐ Stock Cards

Activities:

- ☐ Every month, fill in the SFP Monthly Report. The report should be made for each SFP, each month, by the supervisor in charge of the program.
- ☐ Calculate the indicators for an SFP on a monthly basis, using data recorded in the registration book.

This is an important part of all supplementary feeding programs and allows supervisors to assess their efficiency and effectiveness. Timely and correct interpretation of the different indicators is essential to highlight problems and allow appropriate and prompt action. The collection of data can be done through the regular analysis of indicators (see Table 16). These data are also used to assess the consumption of stock and the future requirements.

REFERENCES

Annan, R. A., Webb, P., & Brown, R. (2014, September). *Management of Moderate Acute Malnutrition: Current Knowledge and Practice*. Retrieved April 5, 2016, from www.cmamforum.org

Bhutta, Z. A., Das, J. K., Rizvi, A., Gaffey, M. F., Walker, N., Horton, S., . . . Black, R. E. (2013). Evidence-based interventions for improvement of maternal and child nutrition: what can be done and at what cost? *The Lancet, 382*(9890), 452-477.

Black, R. E., Allen, L. H., Bhutta, Z. A., Caulfield, L. E., de Onis, M., Ezzati, M., . . . Rivera, J. (2008). Maternal and child undernutrition: global and regional exposures and health consequences. *The Lancet, 371*(9608), 243-260.

Black, R. E., Walker, S. P., Victoria, C. G., Bhutta, Z. A., Christian, P., de Onis, M., . . . Uauy, R. (2013). Maternal and child undernutrition and overweight in low-income and middle-income countries. *The Lancet, 382*(9890), 427-451.

Dent, N., & Holland, D. (2011). Module 12: Management of moderate acute malnutrition. *The Harmonized Training Package: Resource Material for Training on Nutrition in Emergencies, Version 2*. Nutrition Works, Emergency Nutrition Network, Global Nutrition Cluster.

DepEd. (2014). *Implementation of the Department of Education (DepEd) and Department of Social Welfare and Development (DSWD) Funded School-Based Feeding Program (SBFP) for School Year (SY) 2014-2015.* DepEd Order No. 37. s. 2014. Manila.

DG ECHO. (2013). *DG ECHO Thematic Policy Document No. 4 Nutrition: Addressing Nutrition in Emergencies.* European Commission.

DOH. (2014). *DOH Strategic Framework for Comprehensive Nutrition Implementation Plan 2014-2025.* Manila: Department of Health.

DOH. (2015, December). National Guidelines on the Management of Acute Malnutrition for children under 5. *Administrative Order No. 2015-0055*. Manila.

DOH, WHO, UNICEF. (2015). *Integrated Management of Childhood Illnesses.* Manila: Department of Health-World Health Organization.

DOH-HEMS. (2011). *Surveillance in Post Extreme Emergencies and Disasters (SPEED) Operations Manual for Managers.* Health Emergency Management Staff, Department of Health. Manila: DOH.

DOST-FNRI. (2015). *Philippine Nutrition Facts and Figures 2013: 8th NNS Anthropometric Survey.* Food and Nutrition Research Institute, Department of Science and Technology. Taguig City: DOST-FNRI.

DOST-FNRI. (2016). *2016 National Nutrition Summit.* Manila: Food and Nutrition Research Institute.

fantaproject.org. (2008). *Training guide for community-based management of acute malnutrition (CMAM): Guide for Trainers*. Washington DC: Food and Nutrition Technical Assistance (FANTA) Project.

Global Nutrition Cluster. (2008). *A toolkit for addressing nutrition in emergency situations.* New York: IASC Global Nutrition Cluster, UNICEF.

GNC. (2014). *Moderate Acute Malnutrition: A Decision Tool for Emergencies.* Global Nutrition Cluster.

GNC MAM Task Force. (2014). *Moderate Acute Malnutrition: A decision tool for emergencies.* Global Nutrition Cluster.

Golden, M., & Grellety, Y. (2008, October). *Failure to respond to treatment in supplementary feeding programmes(Field Exchange 34)*. Retrieved from Field Exchange: http://www.ennonline.net/fex/34/failure

Golden, M., & Grellety, Y. (2011). *Protocol: Integrated Management of Moderate Acute Malnutrition.*

Golden, M., & Grellety, Y. (2012). *Protocol: Integrated Management of Acute Malnutrition.*

HFTAG. (2016, April 26). *Frequently Asked Questions*. Retrieved from Home Fortification Technical Advisory Group (HFTAG): http://www.hftag.org/faq-page/

NNC. (2012). Approving and Adopting the Philippine Plan of Action for Nutrition 2011-2016. *NNC Governing Board Resolution No. 1, Series of 2012*. Manila: National Nutrition Council.

PNC. (2014). *Philippines Final MNP Summary For Region VIII (updated 13.02.14)-1.* Tacloban City: Philippine Nutrition Cluster.

The Sphere Project. (2011). *Humanitarian Charter and Minimum Standards in Humanitarian Response.* Geneva: The Sphere Project.

UN. (1986). *How to Weigh and Measure Children: Assessment the Nutritional Status of Young Children in Household Surveys.* New York: United Nations.

UN. (2015, September 25). *Sustainable Development Goals*. Retrieved April 5, 2016, from UN Sustainable Development Knowledge Platform: https://sustainabledevelopment.un.org/topics/sustainabledevelopmentgoals

UNICEF. (1990). *A UNICEF Policy Review: Strategy for Improved Nutrition of Children and Women in Developing Countries.* New York: UNICEF.

UNICEF. (2013). *Improving Child Nutrition: The achievable imperative for global progress.* New York: UNICEF.

UNICEF. (2015). *Committing to Child Survival: A Promise Renewed Progress Report.* New York: UNICEF.

WFP. (2012, December). *Programming for Nutrition-Specific Interventions*. Rome: WFP. Retrieved from wfp.org/policy-resources

WFP. (2012, January). *WFP Nutrition Policy*. Rome: WFP. Retrieved from http://www.wfp.org/content/wfp-nutrition-policy

WFP. (2015). *Technical Specifications for Micronutrient powder - children 6-59 months.* World Food Programme (wfp.org).

WFP. (2016, April 5). *Hunger Glossary*. Retrieved from World Food Programme: http://www.wfp.org/hunger/glossary

WFP, UNICEF. (2011). *Updated Guidance on Mutual Areas of Responsibility and Collaboration for Nutrition.* WFP, UNICEF.

WHO. (2000). *The Management of Nutrition in Major Emergencies.* WHO.

WHO. (2012, April 18). *Sixty-Fifth World Health Assembly: Resolutions and Decisions Annexes.* Geneva: World Health Organization. Retrieved from World Health Organization: http://www.who.int/nutrition/topics/nutrition_globaltargets2025/en/

WHO. (2012). *Technical note: Supplementary foods for the management of moderate acute malnutrition in infants and children 6-59 months of age.* Geneva: World Health Organization.

WHO. (2014). *Global Targets 2025 to improve maternal, infant and young child nutrition.* Geneva: World Health Organization.

WHO. (2014, March). *Integrated Management of Childhood Illness: Chart Booklet.* Geneva: WHO. Retrieved April 1, 2016, from www.who.int

WHO. (2014). Module 6: Malnutrition and anaemia. In *Integrated Management of Childhood Illnesses Distance Learning Course.* Geneva: World Health Organization.

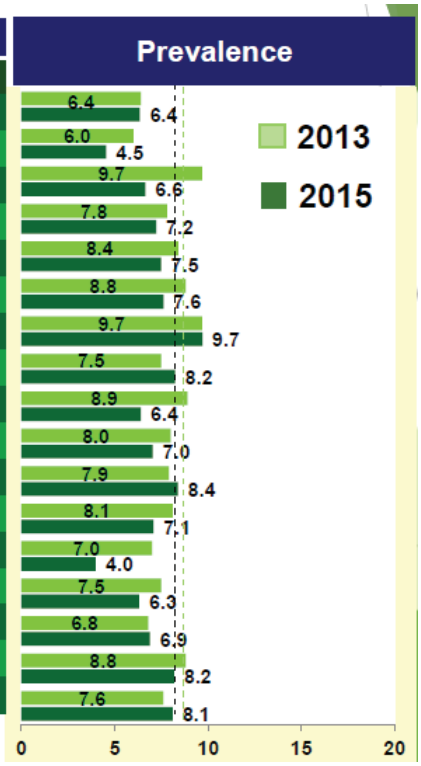
WHO, UNICEF, & WFP. (2014). *Global nutrition targets 2025: wasting policy brief (WHO/NMH/NHD/14.8).* Geneva: World Health Organization.

ANNEXES

Annex 1. Regional data on wasting, stunting, underweight and overweight

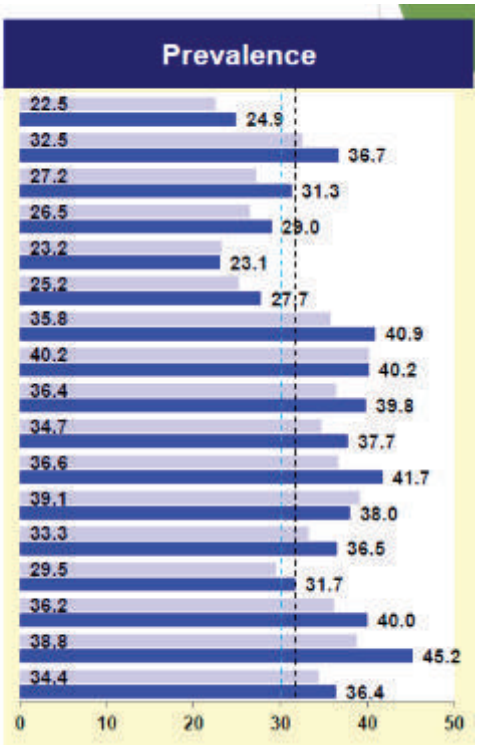
A. Regional Prevalence of Wasting among infants and young children under five (0–59 months), 2013 vs. 2015

Regions	95% Confidence Interval	
	2013	2015
NCR	5.0-7.8	5.1-7.6
CAR	3.9-8.0	3.0-6.1
Ilocos Region	7.5-11.8	4.7-8.6
Cagayan Valley	5.8-9.7	5.5-9.0
Central Luzon	6.7-10.1	5.9-9.1
CALABARZON	7.2-10.4	6.3-9.0
MIMAROPA	6.9-12.6	7.5-11.9
Bicol	5.8-9.2	6.8-9.7
Western Visayas	6.8-11.0	4.8-8.0
Central Visayas	6.2-9.8	5.5-8.6
Eastern Visayas	5.8-9.9	6.9-9.9
Zamboanga Peninsula	5.8-10.4	5.2-8.9
Northern Mindanao	4.9-9.1	2.5-5.5
Davao Region	5.1-10.0	4.7-7.9
SOCCSKSARGEN	4.5-9.1	5.3-8.5
ARMM	5.7-11.9	6.3-10.0
Caraga	5.5-9.8	6.5-9.7



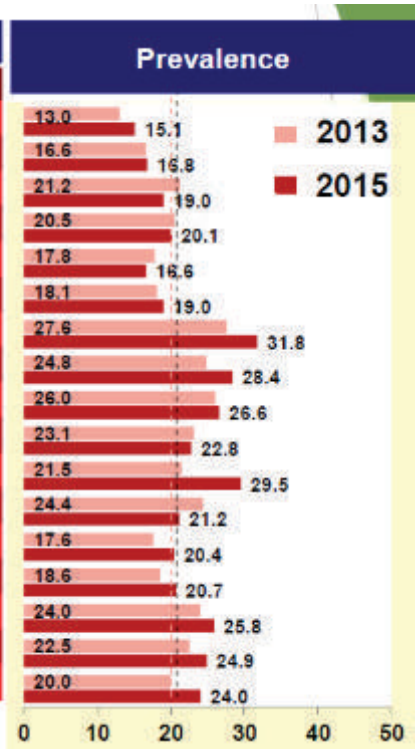
B. Regional Prevalence of Stunting among infants and young children under five (0–59 months), 2013 vs. 2015

Regions	95% Confidence Interval	
	2013	2015
NCR	19.9-25.1	22.3-27.5
CAR	27.8-37.3	32.5-40.8
Ilocos Region	23.6-30.8	27.6-34.9
Cagayan Valley	22.6-30.4	25.4-32.6
Central Luzon	20.4-26.0	20.7-25.5
CALABARZON	22.8-27.7	25.3-30.2
MIMAROPA	30.0-41.7	36.0-45.7
Bicol	36.3-44.0	37.1-43.2
Western Visayas	32.5-40.4	35.9-43.7
Central Visayas	30.7-38.6	34.9-40.6
Eastern Visayas	32.8-40.5	37.9-45.6
Zamboanga Peninsula	34.6-43.6	34.2-41.9
Northern Mindanao	29.9-36.6	31.7-41.2
Davao Region	25.7-33.3	28.0-35.5
SOCCSKSARGEN	30.9-41.5	35.7-44.2
ARMM	34.8-42.9	41.4-49.0
Caraga	30.6-38.1	32.4-40.5



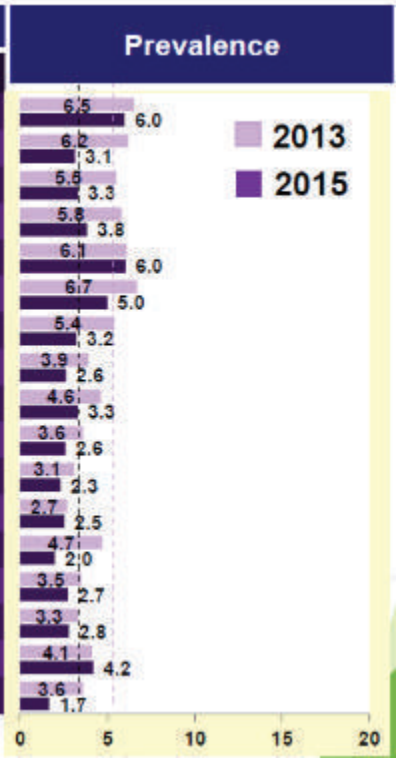
C. Regional Prevalence of Underweight among infants and young children under five (0–59 months), 2013 vs. 2015

Regions	95% Confidence Interval	
	2013	2015
NCR	11.0-15.1	13.4-16.8
CAR	13.4-19.9	13.4-20.0
Ilocos Region	18.1-24.4	15.9-22.1
Cagayan Valley	16.8-24.1	17.2-23.0
Central Luzon	15.1-20.4	14.2-19.0
CALABARZON	16.0-20.2	16.9-21.0
MIMAROPA	22.6-32.6	27.0-36.5
Bicol	21.5-28.0	25.5-31.2
Western Visayas	22.4-29.5	23.1-30.0
Central Visayas	20.0-26.2	20.2-25.3
Eastern Visayas	18.8-24.2	26.2-32.8
Zamboanga Peninsula	20.5-28.4	18.1-24.2
Northern Mindanao	14.7-20.6	17.2-23.7
Davao Region	15.0-22.3	17.9-23.4
SOCCSKSARGEN	20.2-27.8	22.5-29.2
ARMM	19.0-25.9	22.2-27.5
Caraga	16.8-23.1	20.4-27.7



D. Regional Prevalence of Overweight among infants and young children under five (0–59 months), 2013 vs. 2015

Regions	95% Confidence Interval	
	2013	2015
NCR	5.0-8.1	4.8-7.2
CAR	4.2-8.3	1.7-4.5
Ilocos Region	3.8-7.1	1.9-4.7
Cagayan Valley	3.97.8	2.4-5.2
Central Luzon	4.6-7.7	4.7-7.4
CALABARZON	5.3-8.1	3.9-6.1
MIMAROPA	3.6-7.2	1.7-4.7
Bicol	2.4-5.3	1.8-3.4
Western Visayas	3.1-6.2	2.1-4.5
Central Visayas	2.3-4.9	1.6-3.5
Eastern Visayas	1.9-4.4	1.3-3.3
Zamboanga Peninsula	1.2-4.1	1.4-3.7
Northern Mindanao	2.8-6.6	1.0-3.0
Davao Region	2.2-4.8	1.5-3.9
SOCCSKSARGEN	1.8-4.8	1.6-4.0
ARMM	2.4-5.7	2.6-5.8
Caraga	2.3-4.9	0.8-2.6



Source: DOST-FNRI (2016), *2016 National Nutrition Summit*. Manila: Food and Nutrition Research Institute.

Annex 2. Global targets to improve maternal, infant and young child nutrition

		2025 Target	Why it matters
	Stunting	40% reduction in the number of children under 5 who are stunted	Stunting is the largely irreversible outcome of chronic undernutrition and affects 159 million children under the age of five.[13] Stunted children have weaker immune systems, making them more susceptible to death and disease, and diminished cognitive capacity which impacts their ability to learn in school and earn higher incomes later in life.[14, 15]
	Anemia	50% reduction of anemia among women of reproductive age	Anemia affects half a billion women of reproductive age worldwide—impairing their health and economic productivity. In pregnant women, anemia can lead to maternal death and can have serious health consequences for infants including stillbirths, prematurity, and low birth weight.
NOT INCLUDED	Low Birth Weight	30% reduction in low birth weight	Low birth weight is a major predictor of prenatal mortality and morbidity, and increases the risk for noncommunicable diseases later in life.
NOT INCLUDED	Overweight	No increase in childhood overweight	Childhood overweight and obesity increase risks of noncommunicable diseases, premature death, and disability in adulthood.
	Exclusive breastfeeding	Increase the rate of exclusive breastfeeding in the first 6 months up to at least 50%	Breastfeeding boosts a child's immune system, protects from diseases, increases intelligence, and is essential for healthy growth. Scaling up of breastfeeding to a near universal level could save an estimated 823,000 lives per year.[2]
	Wasting	Reduce and maintain childhood wasting (acute malnutrition) to less than 5%	Severely wasted children are, on average, 11 times more likely to die than their healthy counterparts. Two million children die from wasting every year.[19]

Source: WHO (2014). *Global Targets 2025 to improve maternal, infant and young child nutrition,* Geneva: World Health Organization.

Annex 3. WHO Technical Note on Supplementary foods for management of MAM[2]

Principles of Nutritional Management of Children with MAM

1. Every child needs to receive nutrition of a sufficient quality and quantity to enable normal growth and development as defined by the WHO growth and development standards.
2. Management of moderate acute malnutrition in children 6–59 months of age should include essential nutrition actions such as breastfeeding promotion and support, education and nutrition counselling for families, and other activities that identify and prevent the underlying causes of malnutrition, including nutrition insecurity. Interventions to improve food security include the provision of conditional or non-conditional cash transfers and support to agriculture, such as crop diversification.
3. Children 6–59 months of age with moderate acute malnutrition need to receive nutrient-dense foods to meet their extra needs for weight and height gain and functional recovery.
4. Nutrient-dense foods enable children to consume and maximize the absorption of nutrients in order to fulfil their requirements of energy and all essential nutrients. Animal-source foods are more likely to meet the amino acid and other nutrient needs of recovering children. Plant-source foods, in particular legumes or a combination of cereals and legumes, also have high-quality proteins, although they also contain some anti-nutrients such as phytates, tannins or inhibitors of digestive enzymes, which may limit the absorption of some micronutrients, particularly minerals.
5. The amounts of anti-nutrient compounds and naturally occurring toxins, cyanogens, alkaloids or other potentially poisonous or deleterious ingredients can be minimized by using appropriate food-processing methods, such as soaking, germination, malting and fermentation.
6. Supplementary foods, particularly when they represent the main source of energy, need to provide nutrients at levels that do not cause adverse effects in moderately malnourished children when consumed for several months.
7. Determination of the amount of supplementary food that needs to be given to a moderately malnourished child requires consideration of the availability and nutrient content of the child's habitual diet, including whether the child is being breastfed, the likelihood of sharing of the supplementary food within and beyond the household, and access to other foods.
8. The formulation of supplementary foods should be safe and effective, particularly where moderately malnourished children use this food as their only source of energy.
9. The mineral components should be authorized by a regulatory body. The *Codex Alimentarius* includes a list of approved additives and fortificants for foods for infants and young children. **Table 2** shows the list of compounds that have been used for such a preparation and are considered to have adequate bioavailability and stability in a flour-based matrix (e.g. maize or wheat) of a fortified blended food or a lipid-based matrix. In areas where coeliac disease is common, attention should be given to avoiding early introduction of wheat products. Additionally, because of the impaired digestive capacity of malnourished children, water-soluble salts should be used where possible.
10. Hygiene standards should comply with the *Codex Alimentarius* for infant and young children's food. These are being revised and will be discussed and agreed at the 34th Session of the Codex Committee on Nutrition and Foods for Special Dietary Uses in July 2012. It is advisable to give instructions for the safe and hygienic preparation of meals, e.g. those containing fortified blended food.

TABLE 1. Proposed nutrient composition of supplementary foods for use in the management of moderate acute malnutrition in children [a,b]

Nutrient per 1000 kcal		Unit	Minimum	Maximum
Protein [c]		g	20	43
Fat		g	25	65
Minerals:	Sodium (Na)	mg	—	500
	Potassium (K)	mg	1500	2200
	Magnesium (Mg)	mg	280	420
	Phosphorus (P)[d]	mg	850	1400
	Zinc (Zn)	mg	20	35
	Calcium (Ca)	mg	1000	1400
	Copper (Cu)	mg	1	3.5
	Iron (Fe)[e]	mg	18	30
	Iodine (I)	µg	150	350
	Selenium (Se)[f]	µg	35	90

[2] WHO (2012). *Technical note: Supplementary foods for the management of moderate acute malnutrition in infants and children 6-59 months of age*. Geneva: World Health Organization.

TABLE 1. Proposed nutrient composition of supplementary foods for use in the management of moderate acute malnutrition in children [a,b]

Nutrient per 1000 kcal		Unit	Minimum	Maximum
	Manganese (Mn)	mg	1	2g
Vitamins, water soluble				
	Thiamin (B_1)	mg	> 1	—
	Riboflavin (B_2)	mg	> 4	—
	Pyridoxine (B_6)	mg	> 2	—
	Cobalamine (B_{12})	µg	> 5	—
	Folate (dietary folate equivalent)	µg	> 400[h]	—
	Niacin	mg	> 25	—
	Ascorbate (vitamin C)	mg	> 150	—
	Pantothenic acid	mg	> 5	—
	Biotin	µg	> 20	—
Vitamins, fat soluble	Retinol (vitamin A)	µg	2000	3000
	Cholecalciferol (vitamin D)	µg	20	60
	Vitamin E (dl-α tocopherol acetate)	mg	>30	—
	Phytomenadione (vitamin K)	µg	>50	—
Fatty acids	ω-6 fatty acid	% energy	>4.5	<10
	ω-3 fatty acid	% energy	>0.5	<3
	Trans-fatty acids	% total fat		3
Ratios of nutrients (based on weight)	Ca/P ratio		1.0	1.5
	Zn/Cu ratio		5	20
	Zn/Fe ratio		0.8	3.5
	Vitamin C/Fe		3	16

a The suggested concentrations are calculated as an example when supplementary foods provide 70% of energy. This does not constitute a recommendation that supplementary foods should provide 70% of the energy intake of moderately malnourished children. The formulation is such that it would be safe and effective if the quantity taken by moderately malnourished children represented 100% of the energy needs and that it would also provide benefit, although of a lesser order of magnitude, if taken in lower quantities. There is no evidence to determine maximum levels for some nutrients. In countries with established maximum levels for these nutrients in healthy children, it would appear convenient to use those amounts to inform product formulation.

b The energy density of supplementary foods when they are ready to be consumed should be not less than 0.8 kcal/g. c Protein digestibility-corrected amino acid score >70%. Corresponds to cereal/legume mixtures, milk and animal proteins. d Excluding most phosphorus from phytate because that is not bioavailable – assume 30% of phosphorus from plant sources to be available for absorption.

c Protein digestibility-corrected amino acid score >70%. Corresponds to cereal/legume mixtures, milk and animal proteins.

d Excluding most phosphorus from phytate because that is not bioavailable – assume 30% of phosphorus from plant sources to be available for absorption.

e Assumes 5% iron bioavailability.

f Ensure homogeneity in food because of the low toxicity limit for selenium.

g This proposed value applies to added manganese and not intrinsic manganese occurring naturally in foods.

h Equivalent to 240 µg (0.24 mg) folic acid.

TABLE 2. Mineral and vitamin compounds currently used in supplementary foods available on the market for the dietary management of moderate acute malnutrition in children

Minerals		Lipid-based nutrient supplements	Fortified blended foods
Iron	Ferrous sulfate	x	–
	Ferrous fumarate[b]	x	x
	Coated ferrous fumarate	x	x
	Coated ferrous sulfate	x	x
	Ferrous gluconate	x	x
	NaFeEDTA[a]	x	x
Zinc	Zinc sulfate[b]	x	x
	Zinc oxide	(x)	(x)
Copper[c]	Copper sulfate[d]	x	—
	Encapsulated copper sulfate[e]	—	(x)
	Copper gluconate[e]	—	(x)
Iodine	Potassium iodide[f]	x	x
Potassium	Potassium chloride[g]	x	x

TABLE 2. Mineral and vitamin compounds currently used in supplementary foods available on the market for the dietary management of moderate acute malnutrition in children

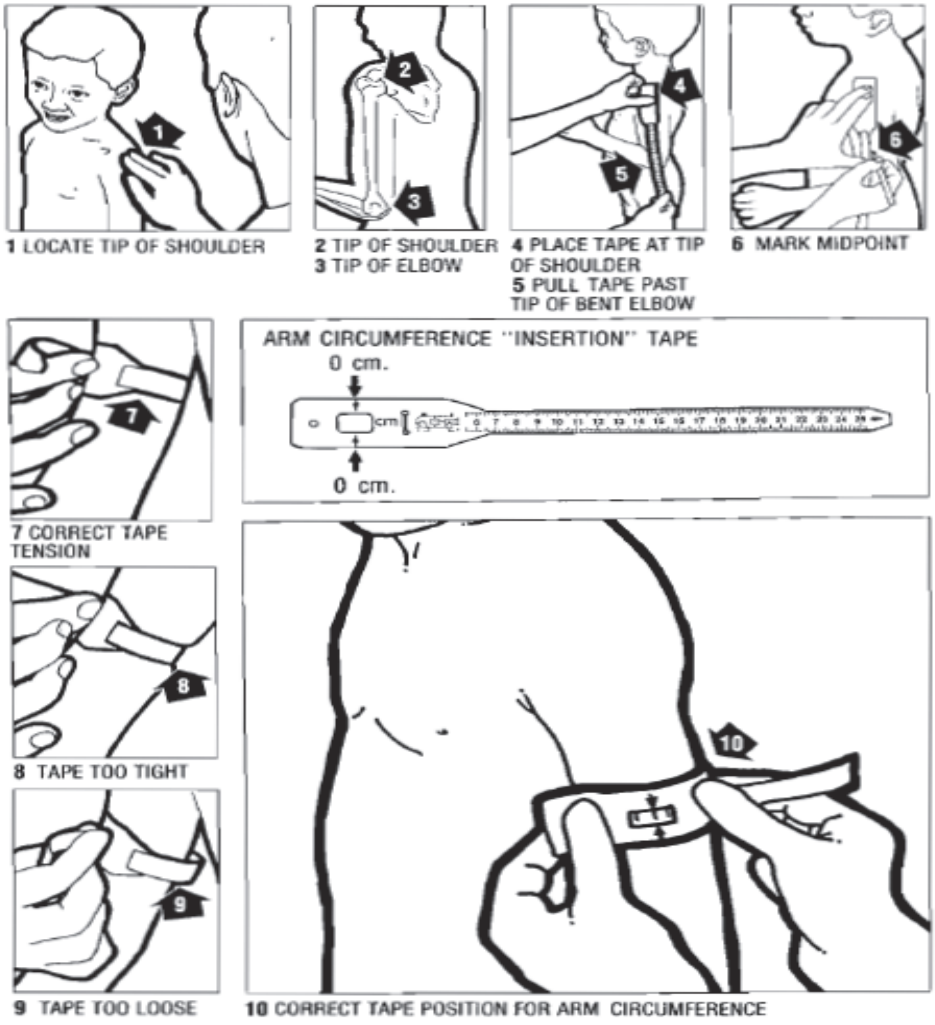
Minerals		**Lipid-based nutrient supplements**	**Fortified blended foods**
Magnesium	Magnesium sulfate	x	x
	Magnesium oxide[b]	—	x
	Magnesium citrate	x	x
	Magnesium gluconate	x	x
Calcium and phosphate[h]	Dicalcium phosphate	x	x
	Tricalcium phosphate	x	x
Selenium[i]	Sodium selenite	x	x
	Sodium selenate	x	x
Manganese	Manganese sulfate	x	x
	Manganese gluconate	x	x
Vitamins		**Lipid-based nutrient supplements**	**Fortified blended foods**
Vitamin A	Dry vitamin A acetate	x	—
	Dry vitamin A palmitate	x	—
	Dry vitamin A palmitate beadlet	—	x
	Dry vitamin A palmitate spray dried	—	x
Vitamin D	Dry vitamin D_3 spray dried	x	x
	Dry vitamin D_3 beadlet	—	x
Vitamin E	Dry vitamin E acetate 50%	x	x
Vitamin K	Dry vitamin K 5%	x	x
Vitamin B_1[j]	Thiamine hydrochloride	x	—
	Thiamine mononitrate	x	x
Vitamin B_2[k]	Riboflavin	x	—
	Riboflavin fine powder[l]	—	x
Vitamin B_6	Pyridoxine hydrochloride	x	x
Niacin	Niacin amide	x	x
Folic acid	Folic acid	x	x
Vitamin B_{12}	Vitamin B_{12} 0.1% spray dried or 1% spray dried	x	x
Vitamin C	Ascorbic acid[m]	—	x
	Ascorbic acid fine powder[n]	x	x
	Sodium ascorbate[o]	x	x
Pantothenic acid	Calcium d-panthothenate	x	x
Biotin	Biotin 1%	x	x
Biotin	Biotin 1%	x	x

a The intake of ethylenediaminetetraacetic acid (EDTA) (including other dietary sources) should not exceed 1.9 mg EDTA/kg of body weight/day.
b Bioavailability with low stomach acidity is questioned.
c Addition of copper is recommended, unless it negatively affects product stability, such as in blended flours. The total amount of zinc in the product should respect the limits of the Zn/Cu ratio and thus depends on whether copper is added to the product.
d Most soluble form.
e Stability of fortified blended foods when adding copper needs to be tested. f A formulation is needed that avoids caking/lumping.
f A formulation is needed that avoids caking/lumping.
g The amount needs to be limited because of taste impact and formulation with anti-caking compound is needed.
h Best calcium/phosphate ratio. i Ensure homogeneity in food because of the low toxicity limit for selenium.
i Ensure homogeneity in food because of the low toxicity limit for selenium.
j Cannot be used in flour because of ability to absorb water.
k Shows as yellow spots, but not visible in lipid-based nutrient supplements.
l Fine powder does not show as yellow spots.
m Sour taste, disappears after cooking.
n Less acid taste.
o Less acid taste, but costlier.

Annex 4. Assessment Techniques for Classifying MAM Cases

A. Mid-Upper Arm Circumference

MUAC is used as an alternative measure of "thinness" to weight-for-height. It is particularly used in children from one to five years; however, its use has been extended to include children more than 6 months (under 67 cm in height).



(UN, 1986)

Figure 1. Techniques for MUAC Screening

Step-By-Step Procedure in Taking the MUAC Measurements (refer to figure above)

Step 1. First locate the tip of the shoulder (1) of the left arm.
Step 2. From the tip of the shoulder (2), with the elbow bent, find the tip of the elbow (3).
Step 3. Place the tape at the tip of the shoulder and extend it to the tip of the elbow (4 and 5).
Step 4. Mark the midpoint between the two (6).
Step 5. Then, slide the tape around the midpoint and take the reading.
Step 6. Feed the end of the tape down through the first opening and up through the third opening. Read the measurement from the middle window where the arrows point inward. Read the number in the box that is completely visible in the middle window.

Figure 2. Three-hole MUAC Tape for infant and young child under five, WFP

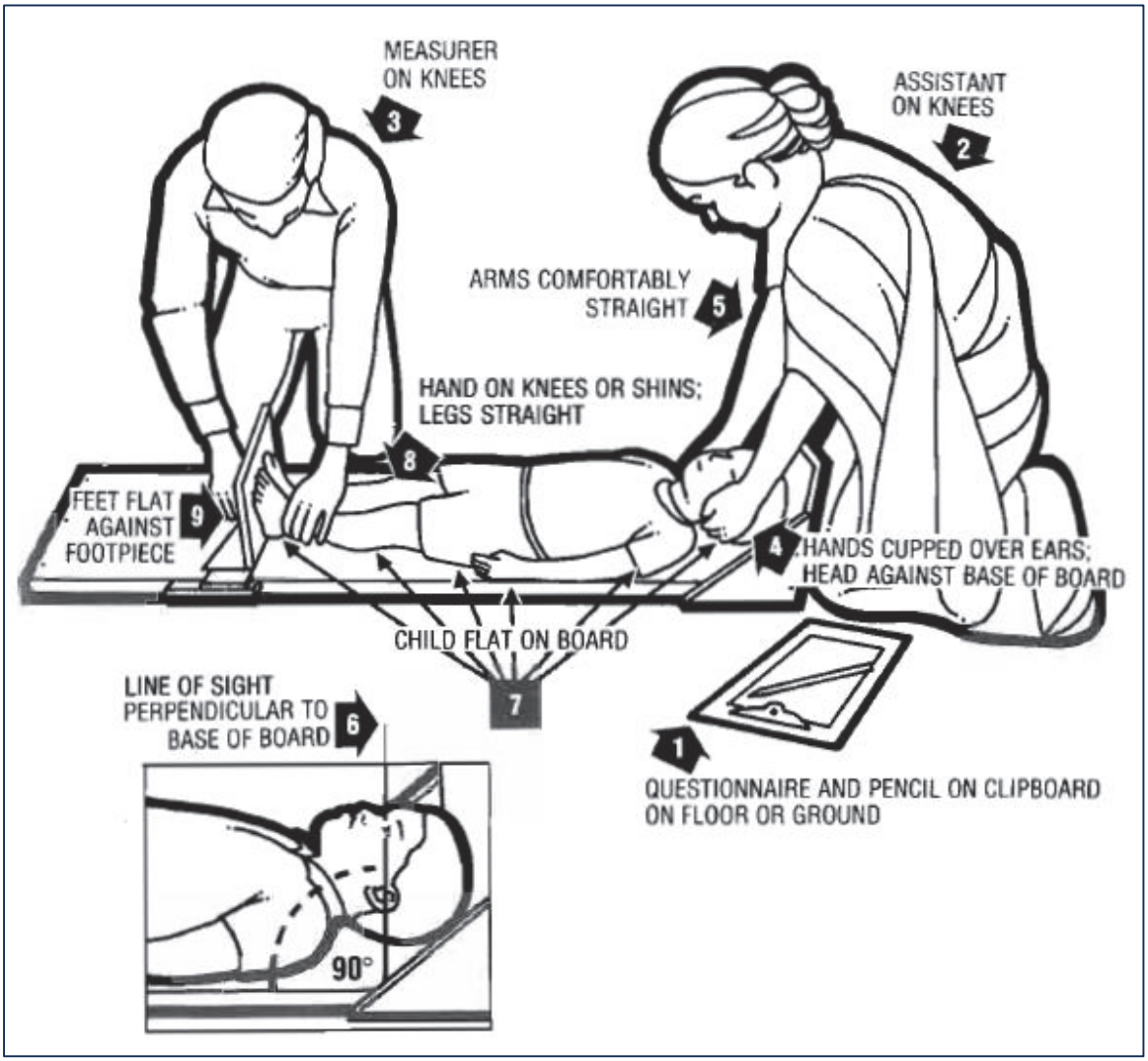
Step 7. Use enough tension to hold the tape against the skin but not pull the skin (7). If the tape is too tight where the skin in pinched (8) or too loose where the tape isn't touching the skin (9), the measurement will be inaccurate.

Step 8. Immediately record the measurement.

Table 1. MUAC Measurement Classification

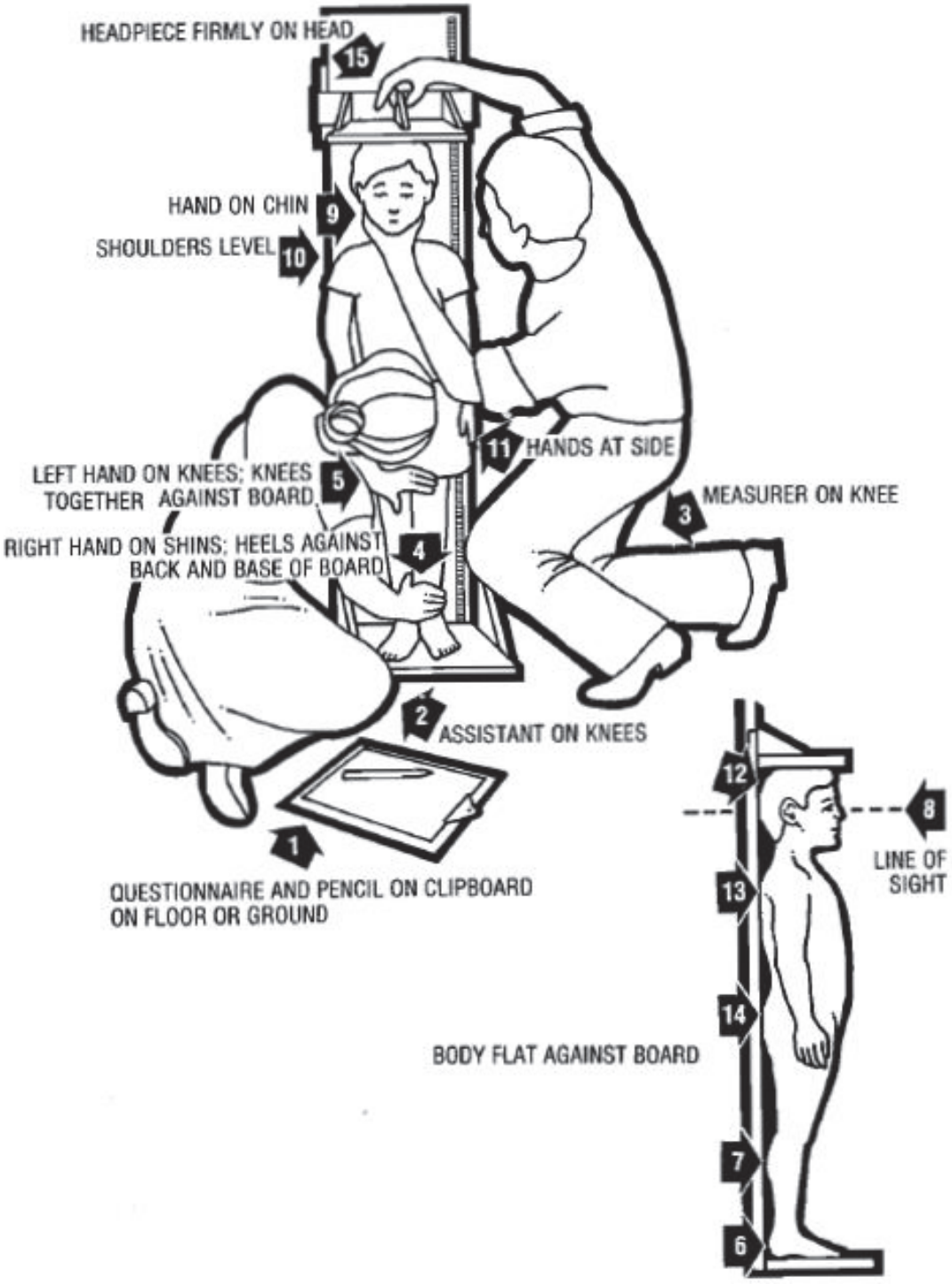
Classification	*SAM*	*MAM*	*Normal*
MUAC	*<11.5 cm*	*11.5 cm to <12.5 cm*	*≥12.5 cm*
Color	*RED*	*YELLOW*	*GREEN*

B. Weight-For-Length/Weight-For-Height (WFL/WFH)



(UN, 1986)

Figure 3. Measuring Length with the Patient in Lying Position



(UN, 1986)

Figure 4. Measuring Height with the Patient in Standing Position

C. Checking for Bilateral Edema

Bilateral edema is the sign of Kwashiorkor, which is always a severe form of malnutrition. Children with bilateral edema are directly identified to have sever acute malnutrition. These children are at high risk of mortality and in need of urgent treatment in a therapeutic feeding program.

In order to determine the presence of edema:

- Normal thumb pressure is applied to both feet of the child for at least three seconds;
- A shallow print persists on both feet if the child has edema.

Source: motherchildnutrition.org

Figure 5. Checking for edema of both feet

Table 2. Classification of Edema

Severity of the Edema		Recording
Mild	Both feet	+
Moderate	Both feet, plus lower legs, hands or lower arms Intermediate between mild and severe	++
Severe	Generalized edema including both feet, legs, hands, arms and face	+++

Annex 5. Child Feeding Assessment[3]

Assess Child's Feeding

Assess feeding if child is Less Than 2 Years Old, Has MODERATE ACUTE MALNUTRITION, ANAEMIA, CONFIRMED HIV INFECTION, or is HIV EXPOSED. Ask questions about the child's usual feeding and feeding during this illness. Compare the mother's answers to the ***Feeding Recommendations*** for the child's age.

ASK - How are you feeding your child?

- **If the child is receiving *any* breast milk, ASK**:
  - How many times during the day?
  - Do you also breastfeed during the night?

- **Does the child take any other food or fluids?**
  - What food or fluids?
  - How many times per day?
  - What do you use to feed the child?
- **If MODERATE ACUTE MALNUTRITION or if a child with CONFIRMED HIV INFECTION fails to gain weight or loses weight between monthly measurements, ASK:**
  - How large are servings?
  - Does the child receive his own serving?
  - Who feeds the child and how?
  - What foods are available in the home?
- **During this illness, has the child's feeding changed?**
  - If yes, how?

[3] Source: DOH, WHO, UNICEF (2015). *Integrated Management of Childhood Illnesses*. Manila: Department of Health

Annex 6. Feeding Counselling and Recommendations

Feeding recommendations FOR ALL CHILDREN during sickness and health, and including HIV EXPOSED children on ARV prophylaxis

Newborn, birth up to 1 week	1 week up to 6 months	6 up to 9 months	9 up to 12 months	12 months up to 2 years	2 years and older
					
▪ Immediately after birth, put your baby in skin to skin contact with you. ▪ Allow your baby to take the breast within the first hour. Give your baby colostrum, the first yellowish, thick milk. It protects the baby from many illnesses. ▪ Breastfeed day and night, as often as your baby wants, at least 8 times in 24 hours. Frequent feeding produces more milk. ▪ If your baby is small (low birth weight), feed at least every 2 to 3 hours. Wake the baby for feeding after 3 hours, if baby does not wake self. ▪ DO NOT give other foods or fluids. Breast milk is all your baby needs. This is especially important for infants of HIV-positive mothers. Mixed feeding increases the risk of HIV mother-to-child transmission when compared to exclusive breastfeeding.	▪ Breastfeed as often as your child wants. Look for signs of hunger, such as beginning to fuss, sucking fingers, or moving lips. ▪ Breastfeed day and night whenever your baby wants, at least 8 times in 24 hours. Frequent feeding produces more milk. ▪ Do not give other foods or fluids. Breast milk is all your baby needs.	▪ Breastfeed as often as your child wants. ▪ Also give thick porridge or well-mashed foods, including animal-source foods and vitamin A-rich fruits and vegetables. ▪ Start by giving 2 to 3 tablespoons of food. Gradually increase to 1/2 cups (1 cup = 250 ml). ▪ Give 2 to 3 meals each day. ▪ Offer 1 or 2 snacks each day between meals when the child seems hungry.	▪ Breastfeed as often as your child wants. ▪ Also give a variety of mashed or finely chopped family food, including animal-source foods and vitamin A-rich fruits and vegetables. ▪ Give 1/2 cup at each meal(1 cup = 250 ml). ▪ Give 3 to 4 meals each day. ▪ Offer 1 or 2 snacks between meals. The child will eat if hungry. ▪ For snacks, give small chewable items that the child can hold. Let your child try to eat the snack, but provide help if needed.	▪ Breastfeed as often as your child wants. ▪ Also give a variety of mashed or finely chopped family food, including animal-source foods and vitamin A-rich fruits and vegetables. ▪ Give 3/4 cup at each meal (1 cup = 250 ml). ▪ Give 3 to 4 meals each day. ▪ Offer 1 to 2 snacks between meals. ▪ Continue to feed your child slowly, patiently. Encourage —but do not force— your child to eat.	▪ Give a variety of family foods to your child, including animal-source foods and vitamin A-rich fruits and vegetables. ▪ Give at least 1 full cup (250 ml) at each meal. ▪ Give 3 to 4 meals each day. ▪ Offer 1 or 2 snacks between meals. ▪ If your child refuses a new food, offer "tastes" several times. Show that you like the food. Be patient. ▪ Talk with your child during a meal, and keep eye contact.

A good daily diet should be adequate in quantity and include an energy-rich food (for example, thick cereal with added oil); meat, fish, eggs, or pulses; and fruits and vegetables.

(DOH, WHO, UNICEF, 2015)

Annex 7. Supplementary Feeding Program Commodities

Ready-to-Use (RUSF) and Milled Form Supplementary Food

- **Product purpose?**
  RUSF is a lipid-based nutrient supplement used to treat MAM in children. It is fortified with micronutrients and contains essential fatty acids and quality protein to ensure a child's nutritional needs are met.
- **Product type?**
  RUSF is generally made of peanuts, sugar, milk powder, vegetable oils, and vitamins and minerals, though it may be made with chickpeas, almond or other commodities. It is a fortified, energy-dense, lipid-based supplementary food that comes in individual packages. It is consumed directly from the package with no dilution, mixing or cooking necessary.
- **When and where is it used?**
  RUSF is at the beginning of intervention for the treatment of MAM and is mostly used in emergency operations before. It is used in addition to breastfeeding and complemenatary feeding for infant and supplementary feeding for young children (6-59 months) who are at high risk of developing malnutrition due to severe food insecurity.
- **How is it used?**
  There are three brands currently available: *Plumpy Sup* (Nutriset), *eeZeeRUSF* (Compact) and *Acha Mum* (WFP Pakistan) that come in one-day sachets for approximately 3 months. It can be eaten directly from its container and is designed to be eaten in small quantities, as a supplement to the regular diet.
- **Specifications** per 100g of *RUSF (according to Codex Alimentarius)*
  Energy: 513 – 550Kcal
  Protein: 12.6 g – 15.4 g
  Fat: 30.3 g – 38.6 g

Table 1. LNS-MAM micronutrient rate

Micronutrient	Unit	Per 100 gram
Vitamin A	mcg	600-1050
Vitamin B1 (Thimamine)	mg	0.6-1.3
Vitamin B2 (Riboflavin)	mg	0.8-2.2
Vitamin B3 (Niacin)	mg	5.3-15.0
Vitamin B5 (Panthothenic Acid)	mg	2.5-4.5
Vitamin B6 (Pirydoxine)	mg	0.6-1.5
Vitamin B7 (Biotin)	mcg	12-85
Vitamin B9 (Folic Acid)	mcg	210-254
Vitamin B12 (Cobalamine)	mcg	1.3-2.5
Vitamin C (Ascorbic acid)	mg	53-132
Vitamin D (Cholecalciferiol)	mcg	7-23
Vitamin E (Tocopheryl acetate)	mg	16-30
Vitamin K (Phytomenadione)	mcg	21-38
Calcium (Ca)	mg	300-545
Copper (Cu)	mg	0.55-2.00
Iodine (I)	mcg	85-150
Iron (Fe)	mg	8-13
Magnesium (Mg)	mg	80-150
Manganese (Mn)	mg	≤0.68
Phosphorus (P)	mg	300-490
Potassium (K)	mg	760-1210
Selenium (Se)	mcg	8-37
Sodium (Na)	mg	≤290
Zinc (Zn)	mg	11-15

Table 2. Limit of Microorganisms in LNS-MAM[4]

Microorganisms	Limit
Escherichia coli	Absent in 1g
Staphylococus aureus	Absent in 1g
Moulds	Max 300 cfu/g
Yeasts and moulds	Max 1000 cfu/g
Salmonella	Absent in 25g
Mesophylic aerobic bacteria	Max 10,000 cfu/g
Clostridium *(sulfite reducing anaerobes)*	Max 10 cfu/g
Listeria monocytogenes	Absent in 25g
Cronobacter Sakazakii	Absent in 10g

Table 3. Specialized Nutritious Foods for treating MAM

[4] Source: WFP Technical Specifications for LNS-MAM. Specification reference: LNS category. Version: V1.1. Date of issue: 20 August, 2012.

Objective	Treatment of MAM	
Generic Term	**Ready-to-Use Supplementary Food (RUSF) High quantity***	**Fortified Blended Food (FBF)**
Products*	 Plumpy'Sup, EezeeRUSF, Acha Mum	 (Supercereal/oil/sugar)
Target Group	6-59 months Others: PLW, HIV+ adults	6-59 months Others: PLW, HIV+ adults
Energy & nutrient/ration or dose	500 kcal 12.5 g protein 31 g fat	787kcal 33 g protein 20 g fat
Daily ration/ child	Sachet = 92g	200 g (250 kg/bag) 250 g (provision for sharing)
Shelf life	24 months	SC: 12 months
Ration or dose	One sachet/day 92g/day (75kcal/kg/day)	200g/day
Approximate duration of Intervention	3 months (90 days)	3-6 months (90-180 days)
Cost/dose/day	$ 0.29 = ₱ 13.63	SC: $ 0.11 – $ 0.16 = ₱ 5.17 – ₱ 7.52

* Quantity is referring to kcals in most cases (GNC MAM Task Force, 2014)

Micronutrient Powder

Micronutrient Powder
Vita Mix and is the brand name of MNP distributed by the DOH as per Department Order 2011-0303 for children 6–23 months of age. A total of 60-sachet of MNP is supplied per child for a duration of 6 months, for a total of 120 sachets in a year. Every other day, it is mixed with locally prepared food before feeding the child.

Composition:

Vitamin A (Retinol) – 400 µg RE	Vitamin B12 -0.9 µg
Vitamin C – 30.0 mg	Folic Acid – 150.0 µg
Vitamin D – 5.0 µg	Iron – 10.0 mg
Vitamin E – 5.0 mg	Zinc – 4.1 mg
Vitamin B1 – 0.5 mg	Copper – 0.56 mg
Vitamin B2 – 0.5 mg	Selenium – 17.0 µg
Niacin – 6.0 mg	Iodine – 90.0 µg
Pyridoxine (B6) – 0.5 mg	

MAM children, along with provisions of locally prepared foods:

- Should continue their compliance with the MNP program, if the MAM children are of ages 6-23 months and who are already receiving MNP regularly
- Should be given 60 sachets of MNP for 6 months, for a total of 120 sachets per year, if the MAM children are of ages 6-23 months and are not recipients of MNP
- Should be given 60 sachets of MNP for 6 months, for a total of 120 sachets per year, if the MAM children are of ages 24-59

It is recommended that children ages 24 to 59 months with MAM should be given MNP in as much as distribution of MNP for children 6-23 months as per DO 2011-0303.

Annex 8. Advantages and Disadvantages of Dry and Wet Feeding

WET FEEDING	
Advantages	***Disadvantages***
▪ Useful when firewood and cooking utensils are so difficult to find that the household has difficulties in preparing meals. ▪ The security situation is so bad that the beneficiaries are put at risk when carrying supplies of food home or storing food at home. ▪ It is easier to ensure that the beneficiary receives the food s/he requires (less sharing of the food). ▪ It is easier to ensure that the ration is prepared correctly and that the hygiene is good. ▪ It is possible to use the mothers' time in the center to do nutrition and hygiene education with them.	▪ As the presence of the mother/caretaker and beneficiary is required at the center every day for most of the day is causes problems in the daily tasks of the household. ▪ There is an increased risk of transmission of diseases having malnourished children concentrated together all day. ▪ The center requires many more staff than a dry center. ▪ The center requires more infrastructure than a dry center. ▪ The capacity for rapid reaction to changes in the situation is lower. ▪ There is a possibility that the food in the center will be used to substitute for the beneficiaries share of food in the household defeating the purpose of the supplementary ration.

DRY FEEDING	
Advantages	***Disadvantages***
▪ Dry feeding requires fewer resources (personnel, structure) than wet feeding and there is no evidence to show that wet feeding is more effective than dry feeding. ▪ A greater number of beneficiaries can be supported. ▪ Less disruption of the family's rhythm as the distribution requires that the mother or caretaker is away from home for a shorter time leading to better coverage and lower defaulter rates. ▪ It keeps responsibility for preparation and feeding within the home. ▪ It is more appropriate for dispersed populations. ▪ Less risk of cross infections. ▪ It is quicker to put in place a dry feeding center.	▪ There is no guarantee that the beneficiary will receive the ration. ▪ Monitoring of the nutritional status of the beneficiary is less frequent. ▪ More difficult to do educational activities. ▪ Requires more food per beneficiary.

Annex 9. Weight-for-Length and Weight-for-Height Charts

CHILD GROWTH STANDARDS TABLE [1, 2]
Weight (kg) for Length (cm) of Girls 0-23 Months

INSTRUCTIONS FOR USE

Upon taking the child's length, round off the actual reading to the nearest 0.5 cm. For instance, for a child 51.3 cm. in length, refer to row 51.5 cm. or if a child's length is 58.3 cm, refer to row 58.5 cm. Depending under which column the weight of the child falls, classify the child as severely wasted, wasted, normal, overweight or obese.

Length (cm)	Weight (kg)							
	Severely Wasted	Wasted		Normal		Overweight		Obese
		From	To	From	To	From	To	
	< -3SD	-3SD	< -2SD	-2SD	+2SD	> +2SD	+3SD	> +3SD
45.0	1.8	1.9	2.0	2.1	3.0	3.1	3.3	3.4
45.5	1.9	2.0	2.0	2.1	3.1	3.2	3.4	3.5
46.0	1.9	2.0	2.1	2.2	3.2	3.3	3.5	3.6
46.5	2.0	2.1	2.2	2.3	3.3	3.4	3.6	3.7
47.0	2.1	2.2	2.3	2.4	3.4	3.5	3.7	3.8
47.5	2.1	2.2	2.3	2.4	3.5	3.6	3.8	3.9
48.0	2.2	2.3	2.4	2.5	3.6	3.7	4.0	4.1
48.5	2.3	2.4	2.5	2.6	3.7	3.8	4.1	4.2
49.0	2.3	2.4	2.5	2.6	3.8	3.9	4.2	4.3
49.5	2.4	2.5	2.6	2.7	3.9	4.0	4.3	4.4
50.0	2.5	2.6	2.7	2.8	4.0	4.1	4.5	4.6
50.5	2.6	2.7	2.8	2.9	4.2	4.3	4.6	4.7
51.0	2.7	2.8	2.9	3.0	4.3	4.4	4.8	4.9
51.5	2.7	2.8	3.0	3.1	4.4	4.5	4.9	5.0
52.0	2.8	2.9	3.1	3.2	4.6	4.7	5.1	5.2
52.5	2.9	3.0	3.2	3.3	4.7	4.8	5.2	5.3
53.0	3.0	3.1	3.3	3.4	4.9	5.0	5.4	5.5
53.5	3.1	3.2	3.4	3.5	5.0	5.1	5.5	5.6
54.0	3.2	3.3	3.5	3.6	5.2	5.3	5.7	5.8
54.5	3.3	3.4	3.6	3.7	5.3	5.4	5.9	6.0
55.0	3.4	3.5	3.7	3.8	5.5	5.6	6.1	6.2
55.5	3.5	3.6	3.8	3.9	5.7	5.8	6.3	6.4
56.0	3.6	3.7	3.9	4.0	5.8	5.9	6.4	6.5
56.5	3.7	3.8	4.0	4.1	6.0	6.1	6.6	6.7
57.0	3.8	3.9	4.2	4.3	6.1	6.2	6.8	6.9
57.5	3.9	4.0	4.3	4.4	6.3	6.4	7.0	7.1
58.0	4.0	4.1	4.4	4.5	6.5	6.6	7.1	7.2
58.5	4.1	4.2	4.5	4.6	6.6	6.7	7.3	7.4
59.0	4.2	4.3	4.6	4.7	6.8	6.9	7.5	7.6
59.5	4.3	4.4	4.7	4.8	6.9	7.0	7.7	7.8
60.0	4.4	4.5	4.8	4.9	7.1	7.2	7.8	7.9
60.5	4.5	4.6	4.9	5.0	7.3	7.4	8.0	8.1
61.0	4.6	4.7	5.0	5.1	7.4	7.5	8.2	8.3
61.5	4.7	4.8	5.1	5.2	7.6	7.7	8.4	8.5
62.0	4.8	4.9	5.2	5.3	7.7	7.8	8.5	8.6
62.5	4.9	5.0	5.3	5.4	7.8	7.9	8.7	8.8
63.0	5.0	5.1	5.4	5.5	8.0	8.1	8.8	8.9
63.5	5.1	5.2	5.5	5.6	8.1	8.2	9.0	9.1
64.0	5.2	5.3	5.6	5.7	8.3	8.4	9.1	9.2
64.5	5.3	5.4	5.7	5.8	8.4	8.5	9.3	9.4
65.0	5.4	5.5	5.8	5.9	8.6	8.7	9.5	9.6
65.5	5.4	5.5	5.9	6.0	8.7	8.8	9.6	9.7
66.0	5.5	5.6	6.0	6.1	8.8	8.9	9.8	9.9
66.5	5.6	5.7	6.1	6.2	9.0	9.1	9.9	10.0
67.0	5.7	5.8	6.2	6.3	9.1	9.2	10.0	10.1
67.5	5.8	5.9	6.3	6.4	9.2	9.3	10.2	10.3
68.0	5.9	6.0	6.4	6.5	9.4	9.5	10.3	10.4
68.5	6.0	6.1	6.5	6.6	9.5	9.6	10.5	10.6
69.0	6.0	6.1	6.6	6.7	9.6	9.7	10.6	10.7
69.5	6.1	6.2	6.7	6.8	9.7	9.8	10.7	10.8
70.0	6.2	6.3	6.8	6.9	9.9	10.0	10.9	11.0
70.5	6.3	6.4	6.8	6.9	10.0	10.1	11.0	11.1
71.0	6.4	6.5	6.9	7.0	10.1	10.2	11.1	11.2
71.5	6.4	6.5	7.0	7.1	10.2	10.3	11.3	11.4
72.0	6.5	6.6	7.1	7.2	10.3	10.4	11.4	11.5
72.5	6.6	6.7	7.2	7.3	10.5	10.6	11.5	11.6
73.0	6.7	6.8	7.3	7.4	10.6	10.7	11.7	11.8
73.5	6.8	6.9	7.3	7.4	10.7	10.8	11.8	11.9
74.0	6.8	6.9	7.4	7.5	10.8	10.9	11.9	12.0
74.5	6.9	7.0	7.5	7.6	10.9	11.0	12.0	12.1
75.0	7.0	7.1	7.6	7.7	11.0	11.1	12.2	12.3
75.5	7.0	7.1	7.7	7.8	11.1	11.2	12.3	12.4
76.0	7.1	7.2	7.7	7.8	11.2	11.3	12.4	12.5
76.5	7.2	7.3	7.8	7.9	11.4	11.5	12.5	12.6
77.0	7.3	7.4	7.9	8.0	11.5	11.6	12.6	12.7
77.5	7.3	7.4	8.0	8.1	11.6	11.7	12.8	12.9

Length (cm)	Weight (kg)							
	Severely Wasted	Wasted		Normal		Overweight		Obese
		From	To	From	To	From	To	
	< -3SD	-3SD	< -2SD	-2SD	+2SD	> +2SD	+3SD	> +3SD
78.0	7.4	7.5	8.1	8.2	11.7	11.8	12.9	13.0
78.5	7.5	7.6	8.1	8.2	11.8	11.9	13.0	13.1
79.0	7.6	7.7	8.2	8.3	11.9	12.0	13.1	13.2
79.5	7.6	7.7	8.3	8.4	12.0	12.1	13.3	13.4
80.0	7.7	7.8	8.4	8.5	12.1	12.2	13.4	13.5
80.5	7.8	7.9	8.5	8.6	12.3	12.4	13.5	13.6
81.0	7.9	8.0	8.6	8.7	12.4	12.5	13.7	13.8
81.5	8.0	8.1	8.7	8.8	12.5	12.6	13.8	13.9
82.0	8.0	8.1	8.7	8.8	12.6	12.7	13.9	14.0
82.5	8.1	8.2	8.8	8.9	12.8	12.9	14.1	14.2
83.0	8.2	8.3	8.9	9.0	12.9	13.0	14.2	14.3
83.5	8.3	8.4	9.0	9.1	13.1	13.2	14.4	14.5
84.0	8.4	8.5	9.1	9.2	13.2	13.3	14.5	14.6
84.5	8.5	8.6	9.2	9.3	13.3	13.4	14.7	14.8
85.0	8.6	8.7	9.3	9.4	13.5	13.6	14.9	15.0
85.5	8.7	8.8	9.4	9.5	13.6	13.7	15.0	15.1
86.0	8.8	8.9	9.6	9.7	13.8	13.9	15.2	15.3
86.5	8.9	9.0	9.7	9.8	13.9	14.0	15.4	15.5
87.0	9.0	9.1	9.8	9.9	14.1	14.2	15.5	15.6
87.5	9.1	9.2	9.9	10.0	14.2	14.3	15.7	15.8
88.0	9.2	9.3	10.0	10.1	14.4	14.5	15.9	16.0
88.5	9.3	9.4	10.1	10.2	14.5	14.6	16.0	16.1
89.0	9.4	9.5	10.2	10.3	14.7	14.8	16.2	16.3
89.5	9.5	9.6	10.3	10.4	14.8	14.9	16.4	16.5
90.0	9.6	9.7	10.4	10.5	15.0	15.1	16.5	16.6
90.5	9.7	9.8	10.5	10.6	15.1	15.2	16.7	16.8
91.0	9.8	9.9	10.6	10.7	15.3	15.4	16.9	17.0
91.5	9.9	10.0	10.7	10.8	15.5	15.6	17.0	17.1
92.0	10.0	10.1	10.8	10.9	15.6	15.7	17.2	17.3
92.5	10.0	10.1	10.9	11.0	15.8	15.9	17.4	17.5
93.0	10.1	10.2	11.0	11.1	15.9	16.0	17.5	17.6
93.5	10.2	10.3	11.1	11.2	16.1	16.2	17.7	17.8
94.0	10.3	10.4	11.2	11.3	16.2	16.3	17.9	18.0
94.5	10.4	10.5	11.3	11.4	16.4	16.5	18.0	18.1
95.0	10.5	10.6	11.4	11.5	16.5	16.6	18.2	18.3
95.5	10.6	10.7	11.5	11.6	16.7	16.8	18.4	18.5
96.0	10.7	10.8	11.6	11.7	16.8	16.9	18.6	18.7
96.5	10.8	10.9	11.7	11.8	17.0	17.1	18.7	18.8
97.0	10.9	11.0	11.9	12.0	17.1	17.2	18.9	19.0
97.5	11.0	11.1	12.0	12.1	17.3	17.4	19.1	19.2
98.0	11.1	11.2	12.1	12.2	17.5	17.6	19.3	19.4
98.5	11.2	11.3	12.2	12.3	17.6	17.7	19.5	19.6
99.0	11.3	11.4	12.3	12.4	17.8	17.9	19.6	19.7
99.5	11.4	11.5	12.4	12.5	18.0	18.1	19.8	19.9
100.0	11.5	11.6	12.5	12.6	18.1	18.2	20.0	20.1
100.5	11.6	11.7	12.6	12.7	18.3	18.4	20.2	20.3
101.0	11.7	11.8	12.7	12.8	18.5	18.6	20.4	20.5
101.5	11.8	11.9	12.9	13.0	18.7	18.8	20.6	20.7
102.0	11.9	12.0	13.0	13.1	18.9	19.0	20.8	20.9
102.5	12.0	12.1	13.1	13.2	19.0	19.1	21.0	21.1
103.0	12.2	12.3	13.2	13.3	19.2	19.3	21.3	21.4
103.5	12.3	12.4	13.4	13.5	19.4	19.5	21.5	21.6
104.0	12.4	12.5	13.5	13.6	19.6	19.7	21.7	21.8
104.5	12.5	12.6	13.6	13.7	19.8	19.9	21.9	22.0
105.0	12.6	12.7	13.7	13.8	20.0	20.1	22.2	22.3
105.5	12.7	12.8	13.9	14.0	20.2	20.3	22.4	22.5
106.0	12.9	13.0	14.0	14.1	20.5	20.6	22.6	22.7
106.5	13.0	13.1	14.2	14.3	20.7	20.8	22.9	23.0
107.0	13.1	13.2	14.3	14.4	20.9	21.0	23.1	23.2
107.5	13.2	13.3	14.4	14.5	21.1	21.2	23.4	23.5
108.0	13.4	13.5	14.6	14.7	21.3	21.4	23.6	23.7
108.5	13.5	13.6	14.7	14.8	21.6	21.7	23.9	24.0
109.0	13.6	13.7	14.9	15.0	21.8	21.9	24.2	24.3
109.5	13.8	13.9	15.0	15.1	22.0	22.1	24.4	24.5
110.0	13.9	14.0	15.2	15.3	22.3	22.4	24.7	24.8

1/ Based on the WHO Child Growth Standards, Methods and Development, 2006
2/ This table is also downloadable at url:www.nnc.gov.ph

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CHILD GROWTH STANDARDS TABLE [1; 2]
Weight (kg) for Length (cm) of Boys 0-23 Months

INSTRUCTIONS FOR USE

Upon taking the child's length, round off the actual reading to the nearest 0.5 cm. For instance, for a child 51.3 cm. in length, refer to row 51.5 cm. or if a child's length is 58.3 cm, refer to row 58.5 cm. Depending under which column the weight of the child falls, classify the child as severely wasted, wasted, normal, overweight or obese.

Length (cm)	Weight (kg)							
	Severely Wasted	Wasted		Normal		Overweight		Obese
		From	To	From	To	From	To	
	< -3SD	-3SD	< -2SD	-2SD	+2SD	> +2SD	+3SD	> +3SD
45.0	1.8	1.9	1.9	2.0	3.0	3.1	3.3	3.4
45.5	1.8	1.9	2.0	2.1	3.1	3.2	3.4	3.5
46.0	1.9	2.0	2.1	2.2	3.1	3.2	3.5	3.6
46.5	2.0	2.1	2.2	2.3	3.2	3.3	3.6	3.7
47.0	2.0	2.1	2.2	2.3	3.3	3.4	3.7	3.8
47.5	2.1	2.2	2.3	2.4	3.4	3.5	3.8	3.9
48.0	2.2	2.3	2.4	2.5	3.6	3.7	3.9	4.0
48.5	2.2	2.3	2.5	2.6	3.7	3.8	4.0	4.1
49.0	2.3	2.4	2.5	2.6	3.8	3.9	4.2	4.3
49.5	2.4	2.5	2.6	2.7	3.9	4.0	4.3	4.4
50.0	2.5	2.6	2.7	2.8	4.0	4.1	4.4	4.5
50.5	2.6	2.7	2.8	2.9	4.1	4.2	4.5	4.6
51.0	2.6	2.7	2.9	3.0	4.2	4.3	4.7	4.8
51.5	2.7	2.8	3.0	3.1	4.4	4.5	4.8	4.9
52.0	2.8	2.9	3.1	3.2	4.5	4.6	5.0	5.1
52.5	2.9	3.0	3.2	3.3	4.6	4.7	5.1	5.2
53.0	3.0	3.1	3.3	3.4	4.8	4.9	5.3	5.4
53.5	3.1	3.2	3.4	3.5	4.9	5.0	5.4	5.5
54.0	3.2	3.3	3.5	3.6	5.1	5.2	5.6	5.7
54.5	3.3	3.4	3.6	3.7	5.3	5.4	5.8	5.9
55.0	3.5	3.6	3.7	3.8	5.4	5.5	6.0	6.1
55.5	3.6	3.7	3.9	4.0	5.6	5.7	6.1	6.2
56.0	3.7	3.8	4.0	4.1	5.8	5.9	6.3	6.4
56.5	3.8	3.9	4.1	4.2	5.9	6.0	6.5	6.6
57.0	3.9	4.0	4.2	4.3	6.1	6.2	6.7	6.8
57.5	4.0	4.1	4.4	4.5	6.3	6.4	6.9	7.0
58.0	4.2	4.3	4.5	4.6	6.4	6.5	7.1	7.2
58.5	4.3	4.4	4.6	4.7	6.6	6.7	7.2	7.3
59.0	4.4	4.5	4.7	4.8	6.8	6.9	7.4	7.5
59.5	4.5	4.6	4.9	5.0	7.0	7.1	7.6	7.7
60.0	4.6	4.7	5.0	5.1	7.1	7.2	7.8	7.9
60.5	4.7	4.8	5.1	5.2	7.3	7.4	8.0	8.1
61.0	4.8	4.9	5.2	5.3	7.4	7.5	8.1	8.2
61.5	4.9	5.0	5.3	5.4	7.6	7.7	8.3	8.4
62.0	5.0	5.1	5.5	5.6	7.7	7.8	8.5	8.6
62.5	5.1	5.2	5.6	5.7	7.9	8.0	8.6	8.7
63.0	5.2	5.3	5.7	5.8	8.0	8.1	8.8	8.9
63.5	5.3	5.4	5.8	5.9	8.2	8.3	8.9	9.0
64.0	5.4	5.5	5.9	6.0	8.3	8.4	9.1	9.2
64.5	5.5	5.6	6.0	6.1	8.5	8.6	9.3	9.4
65.0	5.6	5.7	6.1	6.2	8.6	8.7	9.4	9.5
65.5	5.7	5.8	6.2	6.3	8.7	8.8	9.6	9.7
66.0	5.8	5.9	6.3	6.4	8.9	9.0	9.7	9.8
66.5	5.9	6.0	6.4	6.5	9.0	9.1	9.9	10.0
67.0	6.0	6.1	6.5	6.6	9.2	9.3	10.0	10.1
67.5	6.1	6.2	6.6	6.7	9.3	9.4	10.2	10.3
68.0	6.2	6.3	6.7	6.8	9.4	9.5	10.3	10.4
68.5	6.3	6.4	6.8	6.9	9.6	9.7	10.5	10.6
69.0	6.4	6.5	6.9	7.0	9.7	9.8	10.6	10.7
69.5	6.5	6.6	7.0	7.1	9.8	9.9	10.8	10.9
70.0	6.5	6.6	7.1	7.2	10.0	10.1	10.9	11.0
70.5	6.6	6.7	7.2	7.3	10.1	10.2	11.1	11.2
71.0	6.7	6.8	7.3	7.4	10.2	10.3	11.2	11.3
71.5	6.8	6.9	7.4	7.5	10.4	10.5	11.3	11.4
72.0	6.9	7.0	7.5	7.6	10.5	10.6	11.5	11.6
72.5	7.0	7.1	7.5	7.6	10.6	10.7	11.6	11.7
73.0	7.1	7.2	7.6	7.7	10.8	10.9	11.8	11.9
73.5	7.1	7.2	7.7	7.8	10.9	11.0	11.9	12.0
74.0	7.2	7.3	7.8	7.9	11.0	11.1	12.1	12.2
74.5	7.3	7.4	7.9	8.0	11.2	11.3	12.2	12.3
75.0	7.4	7.5	8.0	8.1	11.3	11.4	12.3	12.4
75.5	7.5	7.6	8.1	8.2	11.4	11.5	12.5	12.6
76.0	7.5	7.6	8.2	8.3	11.5	11.6	12.6	12.7
76.5	7.6	7.7	8.2	8.3	11.6	11.7	12.7	12.8
77.0	7.7	7.8	8.3	8.4	11.7	11.8	12.8	12.9
77.5	7.8	7.9	8.4	8.5	11.9	12.0	13.0	13.1

Length (cm)	Weight (kg)							
	Severely Wasted	Wasted		Normal		Overweight		Obese
		From	To	From	To	From	To	
	< -3SD	-3SD	< -2SD	-2SD	+2SD	> +2SD	+3SD	> +3SD
78.0	7.8	7.9	8.5	8.6	12.0	12.1	13.1	13.2
78.5	7.9	8.0	8.6	8.7	12.1	12.2	13.2	13.3
79.0	8.0	8.1	8.6	8.7	12.2	12.3	13.3	13.4
79.5	8.1	8.2	8.7	8.8	12.3	12.4	13.4	13.5
80.0	8.1	8.2	8.8	8.9	12.4	12.5	13.6	13.7
80.5	8.2	8.3	8.9	9.0	12.5	12.6	13.7	13.8
81.0	8.3	8.4	9.0	9.1	12.6	12.7	13.8	13.9
81.5	8.4	8.5	9.0	9.1	12.7	12.8	13.9	14.0
82.0	8.4	8.5	9.1	9.2	12.8	12.9	14.0	14.1
82.5	8.5	8.6	9.2	9.3	13.0	13.1	14.2	14.3
83.0	8.6	8.7	9.3	9.4	13.1	13.2	14.3	14.4
83.5	8.7	8.8	9.4	9.5	13.2	13.3	14.4	14.5
84.0	8.8	8.9	9.5	9.6	13.3	13.4	14.6	14.7
84.5	8.9	9.0	9.6	9.7	13.5	13.6	14.7	14.8
85.0	9.0	9.1	9.7	9.8	13.6	13.7	14.9	15.0
85.5	9.1	9.2	9.8	9.9	13.7	13.8	15.0	15.1
86.0	9.2	9.3	9.9	10.0	13.9	14.0	15.2	15.3
86.5	9.3	9.4	10.0	10.1	14.0	14.1	15.3	15.4
87.0	9.4	9.5	10.1	10.2	14.2	14.3	15.5	15.6
87.5	9.5	9.6	10.3	10.4	14.3	14.4	15.6	15.7
88.0	9.6	9.7	10.4	10.5	14.5	14.6	15.8	15.9
88.5	9.7	9.8	10.5	10.6	14.6	14.7	15.9	16.0
89.0	9.8	9.9	10.6	10.7	14.7	14.8	16.1	16.2
89.5	9.9	10.0	10.7	10.8	14.9	15.0	16.2	16.3
90.0	10.0	10.1	10.8	10.9	15.0	15.1	16.4	16.5
90.5	10.1	10.2	10.9	11.0	15.1	15.2	16.5	16.6
91.0	10.2	10.3	11.0	11.1	15.3	15.4	16.7	16.8
91.5	10.3	10.4	11.1	11.2	15.4	15.5	16.8	16.9
92.0	10.4	10.5	11.2	11.3	15.6	15.7	17.0	17.1
92.5	10.5	10.6	11.3	11.4	15.7	15.8	17.1	17.2
93.0	10.6	10.7	11.4	11.5	15.8	15.9	17.3	17.4
93.5	10.6	10.7	11.5	11.6	16.0	16.1	17.4	17.5
94.0	10.7	10.8	11.6	11.7	16.1	16.2	17.6	17.7
94.5	10.8	10.9	11.7	11.8	16.3	16.4	17.7	17.8
95.0	10.9	11.0	11.8	11.9	16.4	16.5	17.9	18.0
95.5	11.0	11.1	11.9	12.0	16.5	16.6	18.0	18.1
96.0	11.1	11.2	12.0	12.1	16.7	16.8	18.2	18.3
96.5	11.2	11.3	12.1	12.2	16.8	16.9	18.4	18.5
97.0	11.3	11.4	12.2	12.3	17.0	17.1	18.5	18.6
97.5	11.4	11.5	12.3	12.4	17.1	17.2	18.7	18.8
98.0	11.5	11.6	12.4	12.5	17.3	17.4	18.9	19.0
98.5	11.6	11.7	12.5	12.6	17.5	17.6	19.1	19.2
99.0	11.7	11.8	12.6	12.7	17.6	17.7	19.2	19.3
99.5	11.8	11.9	12.7	12.8	17.8	17.9	19.4	19.5
100.0	11.9	12.0	12.8	12.9	18.0	18.1	19.6	19.7
100.5	12.0	12.1	12.9	13.0	18.1	18.2	19.8	19.9
101.0	12.1	12.2	13.1	13.2	18.3	18.4	20.0	20.1
101.5	12.2	12.3	13.2	13.3	18.5	18.6	20.2	20.3
102.0	12.3	12.4	13.3	13.4	18.7	18.8	20.4	20.5
102.5	12.4	12.5	13.4	13.5	18.8	18.9	20.6	20.7
103.0	12.5	12.6	13.5	13.6	19.0	19.1	20.8	20.9
103.5	12.6	12.7	13.6	13.7	19.2	19.3	21.0	21.1
104.0	12.7	12.8	13.8	13.9	19.4	19.5	21.2	21.3
104.5	12.8	12.9	13.9	14.0	19.6	19.7	21.5	21.6
105.0	12.9	13.0	14.0	14.1	19.8	19.9	21.7	21.8
105.5	13.1	13.2	14.1	14.2	20.0	20.1	21.9	22.0
106.0	13.2	13.3	14.3	14.4	20.2	20.3	22.1	22.2
106.5	13.3	13.4	14.4	14.5	20.4	20.5	22.4	22.5
107.0	13.4	13.5	14.5	14.6	20.6	20.7	22.6	22.7
107.5	13.5	13.6	14.6	14.7	20.8	20.9	22.8	22.9
108.0	13.6	13.7	14.8	14.9	21.0	21.1	23.1	23.2
108.5	13.7	13.8	14.9	15.0	21.2	21.3	23.3	23.4
109.0	13.9	14.0	15.0	15.1	21.4	21.5	23.6	23.7
109.5	14.0	14.1	15.2	15.3	21.7	21.8	23.8	23.9
110.0	14.1	14.2	15.3	15.4	21.9	22.0	24.1	24.2

1/ Based on the WHO Child Growth Standards, Methods and Development, 2006
2/ This table is also downloadable at url:www.nnc.gov.ph

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CHILD GROWTH STANDARDS TABLE [1/, 2/]
Weight (kg) for Height (cm) of Girls 24-60 months old

INSTRUCTIONS FOR USE

Upon taking the child's height, round off the actual reading to the nearest 0.5 cm. For instance, for a child 51.3 cm. in height, refer to row 51.5 cm. or if a child's height is 58.3 cm, refer to row 58.5 cm. Depending under which column the weight of the child falls, classify the child as severely wasted, wasted, normal, overweight or obese.

Height (cm)	Weight (kg)							
	Severely Wasted	Wasted		Normal		Overweight		Obese
		From	To	From	To	From	To	
	< -3SD	-3SD	< -2SD	-2SD	+2SD	> +2SD	+3SD	> +3SD
65.0	5.5	5.6	6.0	6.1	8.7	8.8	9.7	9.8
65.5	5.6	5.7	6.1	6.2	8.9	9.0	9.8	9.9
66.0	5.7	5.8	6.2	6.3	9.0	9.1	10.0	10.1
66.5	5.7	5.8	6.3	6.4	9.1	9.2	10.1	10.2
67.0	5.8	5.9	6.3	6.4	9.3	9.4	10.2	10.3
67.5	5.9	6.0	6.4	6.5	9.4	9.5	10.4	10.5
68.0	6.0	6.1	6.5	6.6	9.5	9.6	10.5	10.6
68.5	6.1	6.2	6.6	6.7	9.7	9.8	10.7	10.8
69.0	6.2	6.3	6.7	6.8	9.8	9.9	10.8	10.9
69.5	6.2	6.3	6.8	6.9	9.9	10.0	10.9	11.0
70.0	6.3	6.4	6.9	7.0	10.0	10.1	11.1	11.2
70.5	6.4	6.5	7.0	7.1	10.1	10.2	11.2	11.3
71.0	6.5	6.6	7.0	7.1	10.3	10.4	11.3	11.4
71.5	6.6	6.7	7.1	7.2	10.4	10.5	11.5	11.6
72.0	6.6	6.7	7.2	7.3	10.5	10.6	11.6	11.7
72.5	6.7	6.8	7.3	7.4	10.6	10.7	11.7	11.8
73.0	6.8	6.9	7.4	7.5	10.7	10.8	11.8	11.9
73.5	6.9	7.0	7.5	7.6	10.8	10.9	12.0	12.1
74.0	6.9	7.0	7.5	7.6	11.0	11.1	12.1	12.2
74.5	7.0	7.1	7.6	7.7	11.1	11.2	12.2	12.3
75.0	7.1	7.2	7.7	7.8	11.2	11.3	12.3	12.4
75.5	7.1	7.2	7.8	7.9	11.3	11.4	12.5	12.6
76.0	7.2	7.3	7.9	8.0	11.4	11.5	12.6	12.7
76.5	7.3	7.4	7.9	8.0	11.5	11.6	12.7	12.8
77.0	7.4	7.5	8.0	8.1	11.6	11.7	12.8	12.9
77.5	7.4	7.5	8.1	8.2	11.7	11.8	12.9	13.0
78.0	7.5	7.6	8.2	8.3	11.8	11.9	13.1	13.2
78.5	7.6	7.7	8.3	8.4	12.0	12.1	13.2	13.3
79.0	7.7	7.8	8.3	8.4	12.1	12.2	13.3	13.4
79.5	7.7	7.8	8.4	8.5	12.2	12.3	13.4	13.5
80.0	7.8	7.9	8.5	8.6	12.3	12.4	13.6	13.7
80.5	7.9	8.0	8.6	8.7	12.4	12.5	13.7	13.8
81.0	8.0	8.1	8.7	8.8	12.6	12.7	13.9	14.0
81.5	8.1	8.2	8.8	8.9	12.7	12.8	14.0	14.1
82.0	8.2	8.3	8.9	9.0	12.8	12.9	14.1	14.2
82.5	8.3	8.4	9.0	9.1	13.0	13.1	14.3	14.4
83.0	8.4	8.5	9.1	9.2	13.1	13.2	14.5	14.6
83.5	8.4	8.5	9.2	9.3	13.3	13.4	14.6	14.7
84.0	8.5	8.6	9.3	9.4	13.4	13.5	14.8	14.9
84.5	8.6	8.7	9.4	9.5	13.5	13.6	14.9	15.0
85.0	8.7	8.8	9.5	9.6	13.7	13.8	15.1	15.2
85.5	8.8	8.9	9.6	9.7	13.8	13.9	15.3	15.4
86.0	8.9	9.0	9.7	9.8	14.0	14.1	15.4	15.5
86.5	9.0	9.1	9.8	9.9	14.2	14.3	15.6	15.7
87.0	9.1	9.2	9.9	10.0	14.3	14.4	15.8	15.9
87.5	9.2	9.3	10.0	10.1	14.5	14.6	15.9	16.0
88.0	9.3	9.4	10.1	10.2	14.6	14.7	16.1	16.2
88.5	9.4	9.5	10.2	10.3	14.8	14.9	16.3	16.4
89.0	9.5	9.6	10.3	10.4	14.9	15.0	16.4	16.5
89.5	9.6	9.7	10.4	10.5	15.1	15.2	16.6	16.7
90.0	9.7	9.8	10.5	10.6	15.2	15.3	16.8	16.9
90.5	9.8	9.9	10.6	10.7	15.4	15.5	16.9	17.0
91.0	9.9	10.0	10.8	10.9	15.5	15.6	17.1	17.2
91.5	10.0	10.1	10.9	11.0	15.7	15.8	17.3	17.4
92.0	10.1	10.2	11.0	11.1	15.8	15.9	17.4	17.5
92.5	10.2	10.3	11.1	11.2	16.0	16.1	17.6	17.7
93.0	10.3	10.4	11.2	11.3	16.1	16.2	17.8	17.9
93.5	10.4	10.5	11.3	11.4	16.3	16.4	17.9	18.0
94.0	10.5	10.6	11.4	11.5	16.4	16.5	18.1	18.2
94.5	10.6	10.7	11.5	11.6	16.6	16.7	18.3	18.4
95.0	10.7	10.8	11.6	11.7	16.7	16.8	18.5	18.6
95.5	10.7	10.8	11.7	11.8	16.9	17.0	18.6	18.7
96.0	10.8	10.9	11.8	11.9	17.0	17.1	18.8	18.9
96.5	10.9	11.0	11.9	12.0	17.2	17.3	19.0	19.1
97.0	11.0	11.1	12.0	12.1	17.4	17.5	19.2	19.3
97.5	11.1	11.2	12.1	12.2	17.5	17.6	19.3	19.4
98.0	11.2	11.3	12.2	12.3	17.7	17.8	19.5	19.6
98.5	11.3	11.4	12.3	12.4	17.9	18.0	19.7	19.8
99.0	11.4	11.5	12.4	12.5	18.0	18.1	19.9	20.0
99.5	11.5	11.6	12.6	12.7	18.2	18.3	20.1	20.2
100.0	11.6	11.7	12.7	12.8	18.4	18.5	20.3	20.4
100.5	11.8	11.9	12.8	12.9	18.6	18.7	20.5	20.6
101.0	11.9	12.0	12.9	13.0	18.7	18.8	20.7	20.8
101.5	12.0	12.1	13.0	13.1	18.9	19.0	20.9	21.0
102.0	12.1	12.2	13.2	13.3	19.1	19.2	21.1	21.2
102.5	12.2	12.3	13.3	13.4	19.3	19.4	21.4	21.5
103.0	12.3	12.4	13.4	13.5	19.5	19.6	21.6	21.7
103.5	12.4	12.5	13.5	13.6	19.7	19.8	21.8	21.9
104.0	12.5	12.6	13.7	13.8	19.9	20.0	22.0	22.1
104.5	12.7	12.8	13.8	13.9	20.1	20.2	22.3	22.4
105.0	12.8	12.9	13.9	14.0	20.3	20.4	22.5	22.6
105.5	12.9	13.0	14.1	14.2	20.5	20.6	22.7	22.8
106.0	13.0	13.1	14.2	14.3	20.8	20.9	23.0	23.1
106.5	13.2	13.3	14.4	14.5	21.0	21.1	23.2	23.3
107.0	13.3	13.4	14.5	14.6	21.2	21.3	23.5	23.6
107.5	13.4	13.5	14.6	14.7	21.4	21.5	23.7	23.8
108.0	13.6	13.7	14.8	14.9	21.7	21.8	24.0	24.1
108.5	13.7	13.8	14.9	15.0	21.9	22.0	24.3	24.4
109.0	13.8	13.9	15.1	15.2	22.1	22.2	24.5	24.6
109.5	14.0	14.1	15.3	15.4	22.4	22.5	24.8	24.9
110.0	14.1	14.2	15.4	15.5	22.6	22.7	25.1	25.2
110.5	14.3	14.4	15.6	15.7	22.9	23.0	25.4	25.5
111.0	14.4	14.5	15.7	15.8	23.1	23.2	25.7	25.8
111.5	14.6	14.7	15.9	16.0	23.4	23.5	26.0	26.1
112.0	14.7	14.8	16.1	16.2	23.6	23.7	26.2	26.3
112.5	14.9	15.0	16.2	16.3	23.9	24.0	26.5	26.6
113.0	15.0	15.1	16.4	16.5	24.2	24.3	26.8	26.9
113.5	15.2	15.3	16.6	16.7	24.4	24.5	27.1	27.2
114.0	15.3	15.4	16.7	16.8	24.7	24.8	27.4	27.5
114.5	15.5	15.6	16.9	17.0	25.0	25.1	27.8	27.9
115.0	15.6	15.7	17.1	17.2	25.2	25.3	28.1	28.2
115.5	15.8	15.9	17.2	17.3	25.5	25.6	28.4	28.5
116.0	15.9	16.0	17.4	17.5	25.8	25.9	28.7	28.8
116.5	16.1	16.2	17.6	17.7	26.1	26.2	29.0	29.1
117.0	16.2	16.3	17.7	17.8	26.3	26.4	29.3	29.4
117.5	16.4	16.5	17.9	18.0	26.6	26.7	29.6	29.7
118.0	16.5	16.6	18.1	18.2	26.9	27.0	29.9	30.0
118.5	16.7	16.8	18.3	18.4	27.2	27.3	30.3	30.4
119.0	16.8	16.9	18.4	18.5	27.4	27.5	30.6	30.7
119.5	17.0	17.1	18.6	18.7	27.7	27.8	30.9	31.0
120.0	17.2	17.3	18.8	18.9	28.0	28.1	31.2	31.3

1/ Based on the WHO Child Growth Standards, Methods and Development, 2006

2/ This table is also downloadable at url:www.nnc.gov.ph

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CHILD GROWTH STANDARDS TABLE [1, 2]
Weight (kg) for Height (cm) of Boys 24-60 months old

INSTRUCTIONS FOR USE

Upon taking the child's height, round off the actual reading to the nearest 0.5 cm. For instance, for a child 51.3 cm. in height, refer to row 51.5 cm. or if a child's height is 58.3 cm, refer to row 58.5 cm. Depending under which column the weight of the child falls, classify the child as severely wasted, wasted, normal, overweight or obese.

Height (cm)	Weight (kg)							
	Severely Wasted	Wasted		Normal		Overweight		Obese
		From	To	From	To	From	To	
	< -3SD	-3SD	< -2SD	-2SD	+2SD	> +2SD	+3SD	> +3SD
65.0	5.8	5.9	6.2	6.3	8.8	8.9	9.6	9.7
65.5	5.9	6.0	6.3	6.4	8.9	9.0	9.8	9.9
66.0	6.0	6.1	6.4	6.5	9.1	9.2	9.9	10.0
66.5	6.0	6.1	6.5	6.6	9.2	9.3	10.1	10.2
67.0	6.1	6.2	6.6	6.7	9.4	9.5	10.2	10.3
67.5	6.2	6.3	6.7	6.8	9.5	9.6	10.4	10.5
68.0	6.3	6.4	6.8	6.9	9.6	9.7	10.5	10.6
68.5	6.4	6.5	6.9	7.0	9.8	9.9	10.7	10.8
69.0	6.5	6.6	7.0	7.1	9.9	10.0	10.8	10.9
69.5	6.6	6.7	7.1	7.2	10.0	10.1	11.0	11.1
70.0	6.7	6.8	7.2	7.3	10.2	10.3	11.1	11.2
70.5	6.8	6.9	7.3	7.4	10.3	10.4	11.3	11.4
71.0	6.8	6.9	7.4	7.5	10.4	10.5	11.4	11.5
71.5	6.9	7.0	7.5	7.6	10.6	10.7	11.6	11.7
72.0	7.0	7.1	7.6	7.7	10.7	10.8	11.7	11.8
72.5	7.1	7.2	7.7	7.8	10.8	10.9	11.8	11.9
73.0	7.2	7.3	7.8	7.9	11.0	11.1	12.0	12.1
73.5	7.3	7.4	7.8	7.9	11.1	11.2	12.1	12.2
74.0	7.3	7.4	7.9	8.0	11.2	11.3	12.2	12.3
74.5	7.4	7.5	8.0	8.1	11.3	11.4	12.4	12.5
75.0	7.5	7.6	8.1	8.2	11.4	11.5	12.5	12.6
75.5	7.6	7.7	8.2	8.3	11.6	11.7	12.6	12.7
76.0	7.6	7.7	8.3	8.4	11.7	11.8	12.8	12.9
76.5	7.7	7.8	8.4	8.5	11.8	11.9	12.9	13.0
77.0	7.8	7.9	8.4	8.5	11.9	12.0	13.0	13.1
77.5	7.9	8.0	8.5	8.6	12.0	12.1	13.1	13.2
78.0	7.9	8.0	8.6	8.7	12.1	12.2	13.3	13.4
78.5	8.0	8.1	8.7	8.8	12.2	12.3	13.4	13.5
79.0	8.1	8.2	8.7	8.8	12.3	12.4	13.5	13.6
79.5	8.2	8.3	8.8	8.9	12.4	12.5	13.6	13.7
80.0	8.2	8.3	8.9	9.0	12.6	12.7	13.7	13.8
80.5	8.3	8.4	9.0	9.1	12.7	12.8	13.8	13.9
81.0	8.4	8.5	9.1	9.2	12.8	12.9	14.0	14.1
81.5	8.5	8.6	9.2	9.3	12.9	13.0	14.1	14.2
82.0	8.6	8.7	9.2	9.3	13.0	13.1	14.2	14.3
82.5	8.6	8.7	9.3	9.4	13.1	13.2	14.4	14.5
83.0	8.7	8.8	9.4	9.5	13.3	13.4	14.5	14.6
83.5	8.8	8.9	9.5	9.6	13.4	13.5	14.6	14.7
84.0	8.9	9.0	9.6	9.7	13.5	13.6	14.8	14.9
84.5	9.0	9.1	9.8	9.9	13.7	13.8	14.9	15.0
85.0	9.1	9.2	9.9	10.0	13.8	13.9	15.1	15.2
85.5	9.2	9.3	10.0	10.1	13.9	14.0	15.2	15.3
86.0	9.3	9.4	10.1	10.2	14.1	14.2	15.4	15.5
86.5	9.4	9.5	10.2	10.3	14.2	14.3	15.5	15.6
87.0	9.5	9.6	10.3	10.4	14.4	14.5	15.7	15.8
87.5	9.6	9.7	10.4	10.5	14.5	14.6	15.8	15.9
88.0	9.7	9.8	10.5	10.6	14.7	14.8	16.0	16.1
88.5	9.8	9.9	10.6	10.7	14.8	14.9	16.1	16.2
89.0	9.9	10.0	10.7	10.8	14.9	15.0	16.3	16.4
89.5	10.0	10.1	10.8	10.9	15.1	15.2	16.4	16.5
90.0	10.1	10.2	10.9	11.0	15.2	15.3	16.6	16.7
90.5	10.2	10.3	11.0	11.1	15.3	15.4	16.7	16.8
91.0	10.3	10.4	11.1	11.2	15.5	15.6	16.9	17.0
91.5	10.4	10.5	11.2	11.3	15.6	15.7	17.0	17.1
92.0	10.5	10.6	11.3	11.4	15.8	15.9	17.2	17.3
92.5	10.6	10.7	11.4	11.5	15.9	16.0	17.3	17.4

Height (cm)	Weight (kg)							
	Severely Wasted	Wasted		Normal		Overweight		Obese
		From	To	From	To	From	To	
	< -3SD	-3SD	< -2SD	-2SD	+2SD	> +2SD	+3SD	> +3SD
93.0	10.7	10.8	11.5	11.6	16.0	16.1	17.5	17.6
93.5	10.8	10.9	11.6	11.7	16.2	16.3	17.6	17.7
94.0	10.9	11.0	11.7	11.8	16.3	16.4	17.8	17.9
94.5	11.0	11.1	11.8	11.9	16.5	16.6	17.9	18.0
95.0	11.0	11.1	11.9	12.0	16.6	16.7	18.1	18.2
95.5	11.1	11.2	12.0	12.1	16.7	16.8	18.3	18.4
96.0	11.2	11.3	12.1	12.2	16.9	17.0	18.4	18.5
96.5	11.3	11.4	12.2	12.3	17.0	17.1	18.6	18.7
97.0	11.4	11.5	12.3	12.4	17.2	17.3	18.8	18.9
97.5	11.5	11.6	12.4	12.5	17.4	17.5	18.9	19.0
98.0	11.6	11.7	12.5	12.6	17.5	17.6	19.1	19.2
98.5	11.7	11.8	12.7	12.8	17.7	17.8	19.3	19.4
99.0	11.8	11.9	12.8	12.9	17.9	18.0	19.5	19.6
99.5	11.9	12.0	12.9	13.0	18.0	18.1	19.7	19.8
100.0	12.0	12.1	13.0	13.1	18.2	18.3	19.9	20.0
100.5	12.1	12.2	13.1	13.2	18.4	18.5	20.1	20.2
101.0	12.2	12.3	13.2	13.3	18.5	18.6	20.3	20.4
101.5	12.3	12.4	13.3	13.4	18.7	18.8	20.5	20.6
102.0	12.4	12.5	13.5	13.6	18.9	19.0	20.7	20.8
102.5	12.5	12.6	13.6	13.7	19.1	19.2	20.9	21.0
103.0	12.7	12.8	13.7	13.8	19.3	19.4	21.1	21.2
103.5	12.8	12.9	13.8	13.9	19.5	19.6	21.3	21.4
104.0	12.9	13.0	13.9	14.0	19.7	19.8	21.6	21.7
104.5	13.0	13.1	14.1	14.2	19.9	20.0	21.8	21.9
105.0	13.1	13.2	14.2	14.3	20.1	20.2	22.0	22.1
105.5	13.2	13.3	14.3	14.4	20.3	20.4	22.2	22.3
106.0	13.3	13.4	14.4	14.5	20.5	20.6	22.5	22.6
106.5	13.4	13.5	14.6	14.7	20.7	20.8	22.7	22.8
107.0	13.6	13.7	14.7	14.8	20.9	21.0	22.9	23.0
107.5	13.7	13.8	14.8	14.9	21.1	21.2	23.2	23.3
108.0	13.8	13.9	15.0	15.1	21.3	21.4	23.4	23.5
108.5	13.9	14.0	15.1	15.2	21.5	21.6	23.7	23.8
109.0	14.0	14.1	15.2	15.3	21.8	21.9	23.9	24.0
109.5	14.2	14.3	15.4	15.5	22.0	22.1	24.2	24.3
110.0	14.3	14.4	15.5	15.6	22.2	22.3	24.4	24.5
110.5	14.4	14.5	15.7	15.8	22.4	22.5	24.7	24.8
111.0	14.5	14.6	15.8	15.9	22.7	22.8	25.0	25.1
111.5	14.7	14.8	15.9	16.0	22.9	23.0	25.2	25.3
112.0	14.8	14.9	16.1	16.2	23.1	23.2	25.5	25.6
112.5	14.9	15.0	16.2	16.3	23.4	23.5	25.8	25.9
113.0	15.1	15.2	16.4	16.5	23.6	23.7	26.0	26.1
113.5	15.2	15.3	16.5	16.6	23.9	24.0	26.3	26.4
114.0	15.3	15.4	16.7	16.8	24.1	24.2	26.6	26.7
114.5	15.5	15.6	16.8	16.9	24.4	24.5	26.9	27.0
115.0	15.6	15.7	17.0	17.1	24.6	24.7	27.2	27.3
115.5	15.7	15.8	17.1	17.2	24.9	25.0	27.5	27.6
116.0	15.9	16.0	17.3	17.4	25.1	25.2	27.8	27.9
116.5	16.0	16.1	17.4	17.5	25.4	25.5	28.0	28.1
117.0	16.1	16.2	17.6	17.7	25.6	25.7	28.3	28.4
117.5	16.3	16.4	17.8	17.9	25.9	26.0	28.6	28.7
118.0	16.4	16.5	17.9	18.0	26.1	26.2	28.9	29.0
118.5	16.6	16.7	18.1	18.2	26.4	26.5	29.2	29.3
119.0	16.7	16.8	18.2	18.3	26.6	26.7	29.5	29.6
119.5	16.8	16.9	18.4	18.5	26.9	27.0	29.8	29.9
120.0	17.0	17.1	18.5	18.6	27.2	27.3	30.1	30.2

1/ Based on the WHO Child Growth Standards, Methods and Development, 2006
2/ This table is also downloadable at url:www.nnc.gov.ph

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Annex 10. Registration Book for MAM Children

Serial No.	Reg. No.	First Name	Last name	Address & phone	Type of Admission (New Admission, Relapse, Readmission, Referral)	Sex F/M	Date of Birth (mmddyy)	Age (month)	Admission								
									Date (mmddyy)	Weight kg.g	Length/ Height cm	WFL/H Z-score	MAM Weight kg.g	Discharge Target WFL/H Z-score	MUAC mm	Discharge Target MUAC mm	Ration Name/ total kg.g
1																	
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	
11																	
12																	
13																	
14																	
15																	
16																	
17																	
18																	
19																	
20																	

Serial No.	Vitamin A		Albendazol		Others		Visit 1				Visit 2				Visit 3				Visit 4				Visit 5				Visit 6			
	Date mmddyy	Dosage	Date mmddyy	Dosage	Date mmddyy	Dosage	Date mmdd	Wt. kg.g	MUAC mm	Ration Name/ total kg.g\	Date mmdd	Wt. kg.g	MUAC mm	Ration Name/ total kg.g	Date mmdd	Wt. kg.g	MUAC mm	Ration Name/ total kg.g	Date mmdd	Wt. kg.g	MUAC mm	Ration Name/ total kg.g	Date mmdd	Wt. kg.g	MUAC mm	Ration Name/ total kg.g	Date mmdd	Wt. kg.g	MUAC mm	Ration Name/ total kg.g
1																														
2																														
3																														
4																														
5																														
6																														
7																														
8																														
9																														
10																														

Serial No.	Visit 7				Visit 8				Visit 9				Visit 10				Discharge						Observation
	Date mmdd	Wt. kg.g	MUAC mm	Ration Name/ total kg.g	Date mmdd	Wt. kg.g	MUAC mm	Ration Name/ total kg.g	Date mmdd	Wt. kg.g	MUAC mm	Ration Name/ total kg.g	Date mmdd	Wt. kg.g	MUAC mm	Ration Name/ total kg.g	Date mmdd	Wt. kg.g	WFL/H Z-score	MUAC mm	Ration Name/ total kg.g	Type of Discharge (Cure, Dead, Defaulter, Non-Responder, Referred to other SFC/ITC/OTC)	
1																							
2																							
3																							
4																							
5																							
6																							
7																							
8																							
9																							
10																							

Annex 11. Individual Ration Card

SFP RATION CARD													
Name of Child							**SFP Registration Number**			/		/	
Caregiver's Name							**Age** (months)						
Distribution Site							**Sex** (M/F)						
Date of Admission							**Address**						
Admission Category		**New admission**		**Relapse after being cured**			**Readmission after defaulting**			**Referred from other SFP site**			
ADMISSION DATA				**DISCHARGE DATA**						**DISCHARGE STATUS**			
Weight (kg)				**Weight** (kg)						1. **Cured**			
Length/Height (cm)				**Length/Height** (cm)						2. **Died**			
WFL/H (Z-score)				**WFL/H** (Z-score)						3. **Defaulted**			
MUAC (mm)				**MUAC** (mm)						4. **Non-recovered**			
				Length of stay (days)						5. **Referred to other SFP/ITC/OTC**			
Drugs Given Once		**Date**		**Remarks**									
Vitamin A													
Deworming													
Measles Vaccination													
EPI update													
Date													
Weight													
Length/Height													
MUAC													
WFL/H													
REMARKS													

**Information in the shaded area is ideally collected, but information in the non-shaded areas is essential.* (FANTA Project, 2008)

Annex 12. MAM Child Card[5]

		Target Weight(W): _____ MAM W: _____ Target MUAC: _____						Discharge Date(mmddyy)			
Admission Date (mmddyy)		Visit	Date (mmddyy)	Weight (kg.g)	MUAC (mm)	Ration	Observation	Tick the right answer:			
Admission Type		Admission									
SFC Name		2						Cured			
Location		3									
Referred from		4						Dead			
		5							cause		
First Name		6								IPF	Other
Last Name		7						Defaulter			
Address		8							cause		
		9									
SFC Registration No.		10						Non-Responder			
		11							cause		
Date of Birth											
Age (in months)								Transfer/Referred to another SFC/ITC/OTC			
Sex (M/F)									cause		
									Date	Dosage	Remarks
								Vitamin A			
								Albendazole			
								Other			

[5] Adapted from fantaproject.org (2008). *Training guide for community-based management of acute malnutrition (CMAM): Guide for Trainers*. Washington D.C.: Food and Nutrition Technical Assistance Project.

Annex 13. Referral Slip[6]

Name of child:			**Community:**
Age:			**Sex:**
Admission Date:			**SFP Site:**
ADMISSION DATA	**Weight:**	**MUAC:**	**Referral to:**
	Height:	**WFL/H:**	
	Bilateral pitting edema (circle one)**:** None + ++ +++		**Registration No.:**
Date of referral:			
Criteria for referral:			
Treatment given:			**Comments:**

[6] Source: fantaproject.org. (2008). *Training guide for community-based management of acute malnutrition (CMAM): Guide for Trainers*. Washington D.C.: Food and Nutrition Technical Assistance Project. As adapted from *Community-based Therapeutic Care (CTC): A Field Manual*.

Annex 14. Monthly Center Tally Sheet[7]

	CATEGORY	
	6-59 months	**TOTAL**
Total at end last month (A)		
New Admissions (B)[8] (WFL/H -3 and <-2 Z-scores or MUAC ≥115mm and <125mm)		
Other criteria (C) Relapse, Readmission, Referral		
Total New Admissions (D)		
Re-admissions (E)		
Total Admissions (F) = D + E		
Discharged in this Period		
Cured (G)		
Deaths (H)		
Defaulters (I)		
Non-responder (J)		
Referred to other SFC or ITC/OTC (K)		
Total Exits (L) = G + H + I + J + K		
New Total at month end (M) = (A + F) – L		

Targets as Percent of Exits For 6-59 months
Recovered > 75% G/K * 100 =
Deaths < 3% H/K * 100 =
Defaulters < 15% I/K * 100 =
Non-responders J/K * 100 =

[7] Adapted from fantaproject.org (2008). *Training guide for community-based management of acute malnutrition (CMAM): Guide for Trainers*. Washington D.C.: Food and Nutrition Technical Assistance Project.

[8] During the transition to the use of the 2006 WHO Growth Standards, and the shift to the use of Z scores as opposed to percentage of the median, some programs will continue to admit based on percentage of the median. In this case, it would be WFH ≥70% and <80% of the median.

Annex 15. Monthly MAM Treatment Report[9]

SFP - MONTHLY STATISTICS REPORT - MANAGEMENT OF MODERATE ACUTE MALNUTRITION

National MOH Logo here

SFP CODE		IMPLEMENTING PARTNER	
NAME OF THE FACILITY		REPORT PREPARED BY:	
TYPE OF FACILITY		REPORT PERIOD from (dd/mm/yy) to	
REGION		(dd/mm/yy)	
DISTRICT		DATE OF SUBMISSION	
OPENING DATE			

Age Group	**Total** Beginning of the month	NEW ADMISSION (WFL/H -3 to <-2 Z-score or MUAC ≥115mm & <125mm)	RELAPSE (after being cured)	READMISSION (after default of <2 months)	REFERRAL (from other SFC)	**Total Admissions**	**Discharge**				REFERRAL TO OTHER SFC or ITC/OTC	**Total Exits** (Discharge and Referral)	**Total** End of the month
							CURED	DEAD	DEFAULTER	NON-RESPONDER			
6-59 months													
Total													
							%	%	%	%	%		

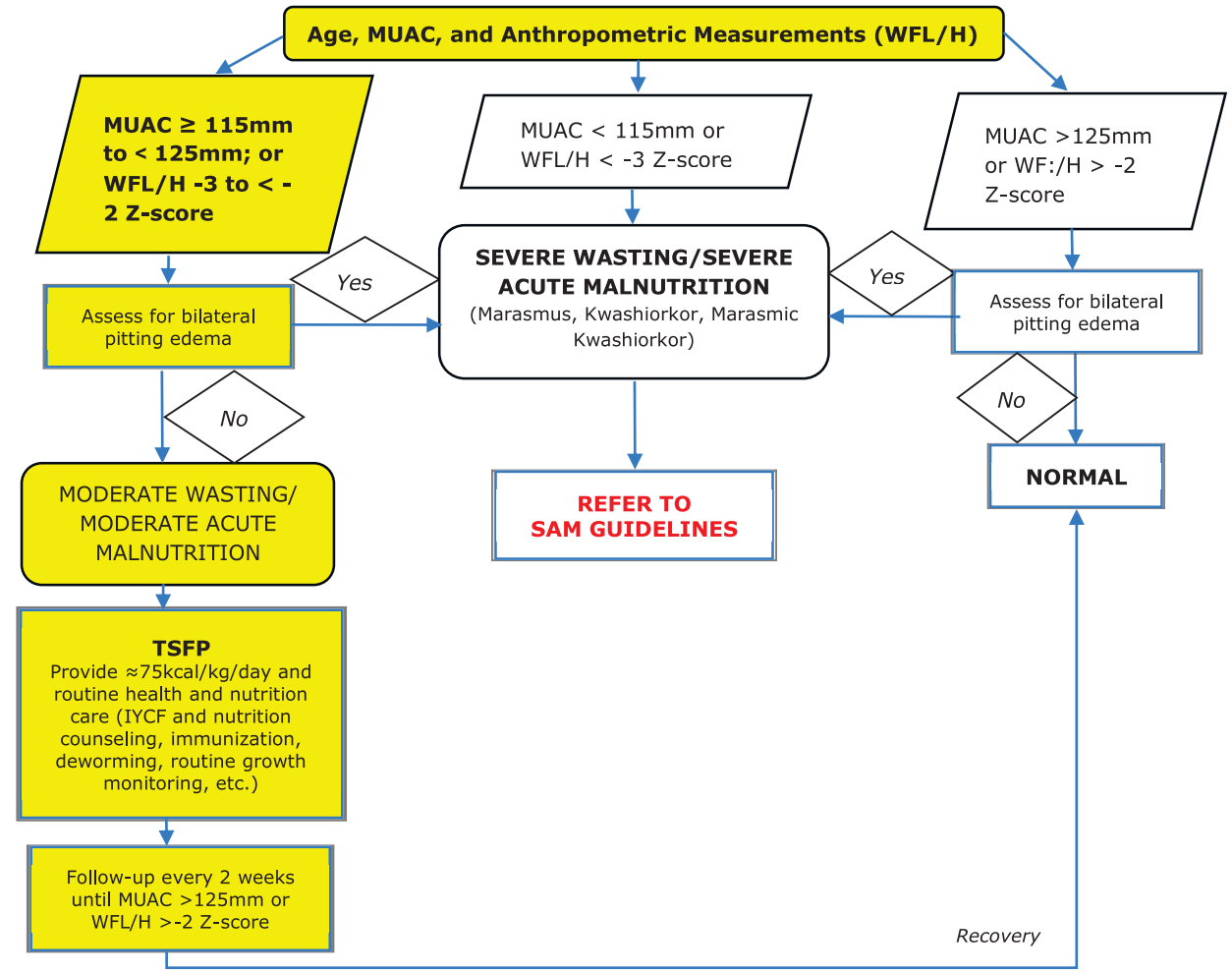
Error of admission

specify type & month

Products							
Begin Month							
IN							
OUT							
Losses							
End Month							

[9] Adapted from fantaproject.org (2008). Training guide for community-based management of acute malnutrition (CMAM): Guide for Trainers. Washington D.C.: Food and Nutrition Technical Assistance Project.

Annex 16. Accompanying Charts for the Management of MAM



Flowchart for Managing MAM

Criteria for classifying degree of acute malnutrition in infants and young children 6 to 59 months		
Tool	**MAM**	**SAM**
MUAC	115mm (11.5cm) to < 125mm (12.5cm)	< 115mm (11.5cm)
WFL/H	-3 Z-score to < -2 Z-score	< -3 Z-score
Bilateral pitting edema	absent (-)	absent (-)/present (+)

ADMISSION

Admission Criteria for MAM Cases	
Age Group	**Admission Criteria**
Infants and young children 6–59 months	▪ WFL/H Z-score -3 to < -2 (WHO CGS) **OR** ▪ MUAC 11.5 cm to < 12.5 cm **AND** ▪ Absence of bilateral pitting edema

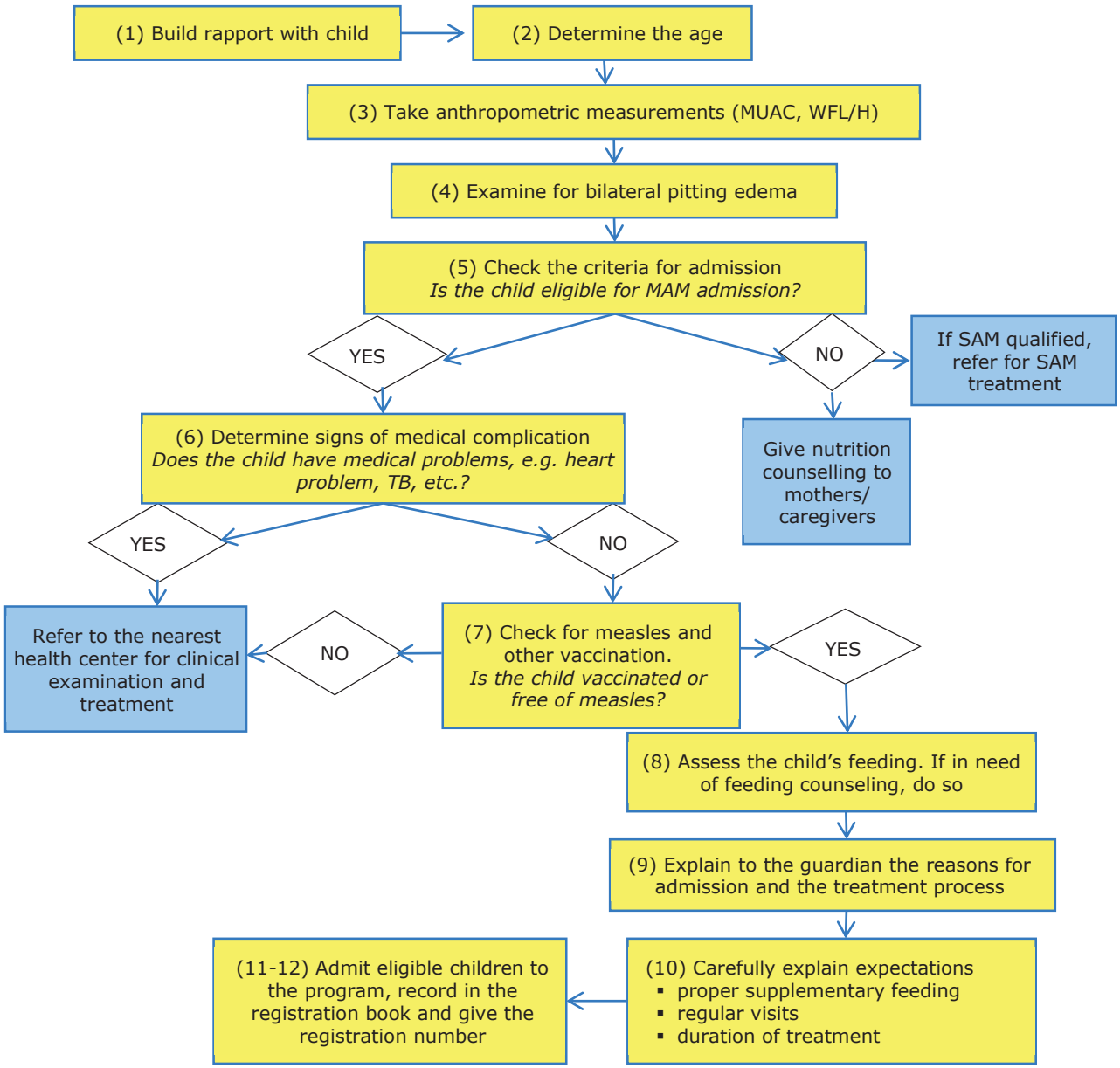


Figure 14. Procedures of Admission

TREATMENT

Supplementary Foods		
RUSF	**Locally Prepared Foods**	**Blended Cereals**
		

Sample timeline for routine health services in a year						
Month	**Breastfeeding**	**Oral Health**	**Immunization**	**Vitamin A**	**Deworming**	**MNP/Iron**
1st						MNP
2nd						MNP
3rd			Measles			Iron
4th				GP	GP	Iron
5th						
6th						Iron
7th						
8th						
9th						Iron
10th				GP	GP	
11th						
12th			DPT			

Blank timeline for routine health services in a year						
Month	**Breastfeeding**	**Oral Health**	**Immunization**	**Vitamin A**	**Deworming**	**MNP/Iron**
1st						
2nd						
3rd						
4th						
5th						
6th						
7th						
8th						
9th						
10th						
11th						
12th						

IMMUNIZATION SCHEDULE: Follow national guidelines

AGE	VACCINE				
Birth	BCG*	OPV-0	Hep B0		
6 weeks	DPT+HIB-1	OPV-1	Hep B1	RTV1	PCV1***
10 weeks	DPT+HIB-2	OPV-2	Hep B2	RTV2	PCV2
14 weeks	DPT+HIB-3	OPV-3	Hep B3	RTV3	PCV3
9 months	Measles **				
18 months	DPT				

(DOH, WHO, UNICEF, 2015)

*Children who are HIV positive or unknown HIV status with symptoms consistent with HIV should not be vaccinated.

**Second dose of measles vaccine may be given at any opportunistic moment during periodic supplementary immunization activities as early as one month following the first dose.

***HIV-positive infants and pre-term neonates who have received 3 primary vaccine doses before 12 months of age may benefit from a booster dose in the second year of life.

Immunization schedule

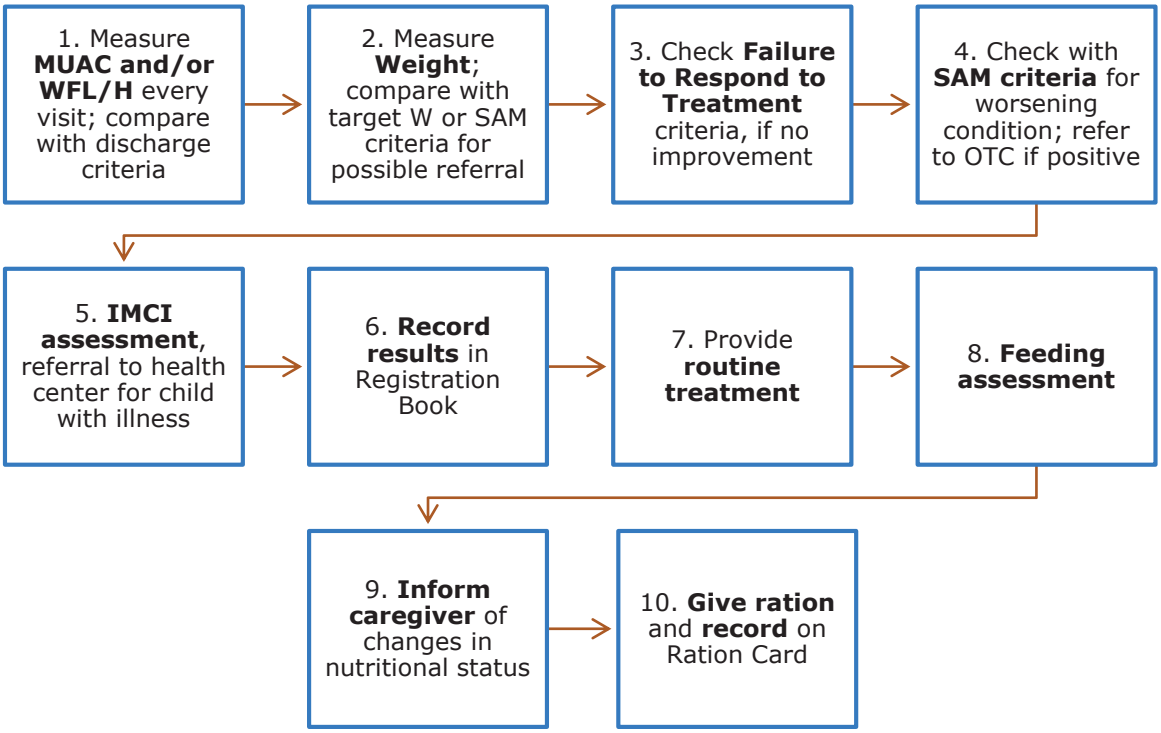
Vitamin A Supplementation		
Age Group	**Vitamin A IU oral intake**	**Price/unit**
6–11 months	100,000 IU	₱ 1.44
12–59 months	200,000 IU	₱ 1.44

Mebendazole/Albendazole Treatment				
Age Group	**Mebendazole 500mg tablet**	**Price/unit** (as of 2013)	**Albendazole 400mg tablet**	**Price/unit** (as of 2013)
<12 months	N/A	-	N/A	-
12–23 months	one (1) tablet as single dose	₱ 1.97	200mg single dose/6 months	₱ 0.84 x ½
24 months and above	one (1) tablet as single dose		400mg single dose/6 months	₱ 0.84

Micronutrient Powder Supplementation		
Age	**MNP**	**Price/unit** (as of 2014)
6–11 months	60 sachets to consume within 6 months	₱ 1.32 ($0.028) for a 1g sachet
12–23 months	60 sachets within 6 months; 120 sachets in a year	

Iron/Folate Therapeutic Dose				
Age or Weight	**Ferrous Sulfate 200mg + Folate 250µg tab** (60mg elemental iron)	**Price/dose** (as of 2013)	**Iron syrup** (30mg/5mL) **or Iron drops** (15mg/0.6mL)	**Price/unit** (as of 2013)
2–4 months (4 to <6kg)			Syrup: 1.0 mL (<¼ tsp)	₱ 10.65 for 60mL syrup OR ₱ 12.93 for 15mL drops
4–12 mos. (6 to <10kg)			Syrup: 1.25 mL (¼ tsp)	
12mos.–3yrs. (10 to <14kg)	½ tablet	₱ 0.85 x ½	Syrup: 2.0 mL (<½ tsp) Drops: 0.5 mL	
3–5 yrs. (14 to 19kg)	½ tablet		Syrup: 2.5 mL (<½ tsp) Drops: 0.6 mL	

MONITORING



Procedures for monitoring

Summary of tracking and monitoring in the SFC

Activities in SFC/SFP	Frequency
MUAC is taken	Every 2 weeks
Weight is taken using the same scale	Every 2 weeks
Height and length are measured	At admission, monthly and if child substitution is suspected
WFL/H can be calculated as required	Day of admission and discharge

Steps on managing treatment failures

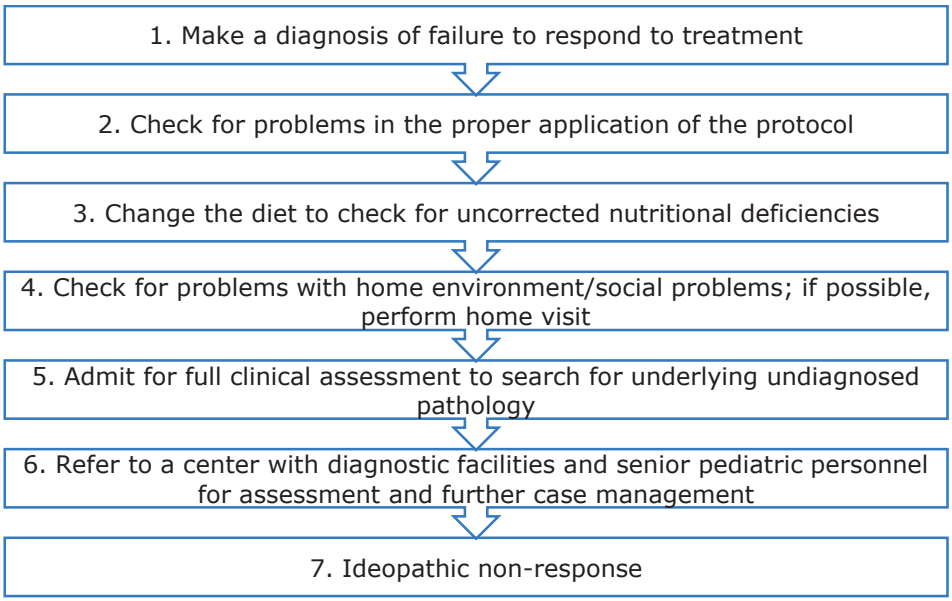
Step 1 •Improve the child's nutritional intake.

Step 2 •On the 2nd visit, check the child's response to treatment.

Step 3 •Investigate the home social circumstances; conduct home visit.

Step 4 •Investigate underlying pathology.

Figure 29. Approach to manage failure to respond to treatment



DISCHARGE

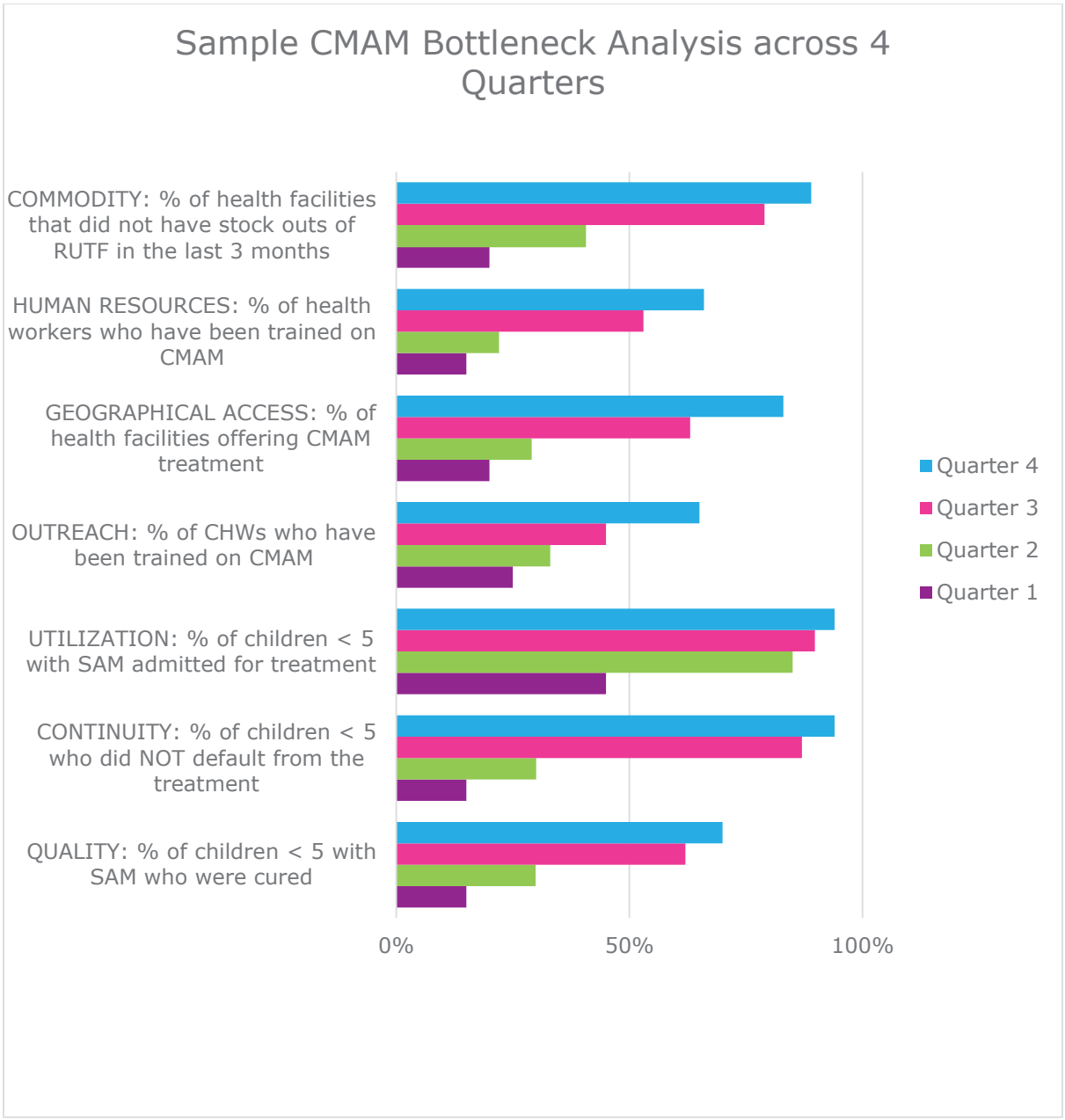
Discharge Criteria for MAM	
Category	**Discharge Criteria**
Cured MAM child (6-59 months)	▪ Admitted by WFL/H: ≥ -2 Z-score for 2 consecutive visits; AND/OR ▪ Admitted by MUAC: ≥ 12.5 cm for 2 consecutive visits ▪ Clinically well
Defaulted	▪ Absence for 3 consecutive visits
Non-response	▪ 4 months without reaching cured criteria ▪ Failure to respond to treatment
Died	▪ Death of child

Annex 17. Bottleneck Analysis

Periodic evaluation of the CMAM program through the bottleneck analysis (BNA) can help identify obstacles to service delivery in order to address impediments and improve coverage of services. The program areas are evaluated across seven determinants across a specific time period: commodity availability, human resources availability, geographic availability, community mobilization activities, utilization of services, continuity of services, and quality of services. The BNA is recommended to be performed every 3 months.

Indicator	Numerator/Denominator
COMMODITY: % of health facilities that did not have stock outs of RUTF in the last 3 months	Numerator: Number of health facilities with no stock outs
	Denominator: Total number of health facilities offering CMAM services in area monitored
HUMAN RESOURCES: % of health workers who have been trained on CMAM	Numerator: Number of health workers trained in CMAM
	Denominator: Total number of health workers in area monitored
GEOGRAPHICAL ACCESS: % of health facilities offering CMAM treatment	Numerator: Number of health facilities offering CMAM treatment in area monitored
	Denominator: Total number of health facilities in area monitored
OUTREACH: % of CHWs who have been trained on CMAM	Numerator: Number of community health workers trained in CMAM
	Denominator: Total number of community health workers in area monitored
UTILIZATION: % of children < 5 with MAM admitted for treatment	Numerator: Number of children < 5 newly admitted for MAM
	Denominator: Number of children expected to have MAM for period monitored
CONTINUITY: % of children < 5 who did NOT default from treatment	Numerator: Number of children < 5 years newly admitted for treatment of MAM minus defaulters
	Denominator: Total number of children expected to have MAM in area monitored for the period monitored
QUALITY: % of children < 5 with MAM who were cured	Numerator: Number of children with MAM who were cured in area monitored
	Denominator: Total number of children expected to have MAM in area monitored for period monitored

Once the above figures are obtained, it may be helpful to plot this data in graphs to evaluate and compare trends. Visualization of data trends may help programme area identify constraints or bottlenecks and work towards improving service delivery. The following is a sample BNA in an area across 4 quarters.


Sample CMAM Bottleneck Analysis across 4 Quarters
COMMODITY: % of health facilities that did not have stock outs of RUTF in the last 3 months
HUMAN RESOURCES: % of health workers who have been trained on CMAM
GEOGRAPHICAL ACCESS: % of health facilities offering CMAM treatment
OUTREACH: % of CHWs who have been trained on CMAM
UTILIZATION: % of children < 5 with SAM admitted for treatment
CONTINUITY: % of children < 5 who did NOT default from the treatment
QUALITY: % of children < 5 with SAM who were cured
0%
50%
100%
Quarter 4
Quarter 3
Quarter 2
Quarter 1

ANNEX18: C-MAMI Assessment for Nutritional Vulnerability in Infants aged <6 months

I. C-MAMI Assessment for Nutritional Vulnerability in Infants aged <6 months (Infant)

ASSESS		CLASSIFY		ACT (MANAGE)
1. *TRIAGE:* Check for general clinical danger signs or signs of very severe disease (for infant only)				
Ask, Listen • As per existing IMCI assessment protocols	***Identify, Analyse*** • Any IMCI danger signs	• Any general danger sign • Any signs of severe or very severe disease • NB Be careful when assessing DEHYDRATION due to diarrhoea: some signs (e.g. dry mouth, dry eyes, sunken eyes, decreased skin turgor) can occur in severe wasting without dehydration. Focus more on history (vomiting/diarrhoea/not drinking/thirst); poor urine output (absent or very dark/concentrated urine); recent weight loss; fast/weak pulse	***Pink:*** **VERY SEVERE DISEASE**	• **Actions as per IMCI, with URGENT referral to inpatient care** • Continue to anthropometric assessment once any life-threatening problems have been addressed: there may also be underling undernutrition
2. (A)nthropometric/Nutritional Assessment				
CHECK FOR ACUTE MALNUTRITION LOOK AND FEEL: Look for signs of acute malnutrition • Look for pitting oedema of both feet • Measure weight and length and determine weight-for-length (WFL) z-score where calculable • Record Mid Upper Arm Circumference (MUAC) for all infants (for on-going and future studies)[5] • NOTE: clinical assessment for visible wasting is not a reliable substitute for anthropometry and will result in cases being missed. It should only be done where length is <45cm and WFL z-score cannot be calculated. ASK: • If growth monitoring card is available. If yes, note: • Birth weight • Current growth centile • Growth trend if previous data available • Growth velocity and growth pattern (e.g. whether tracking along or falling across centile lines) If no, record: • Weight for Age (W/A)		**Severe Acute Malnutrition / HIGH Nutritional Risk** • WLZ <-3 **OR** • Recent severe weight loss or prolonged (weeks-months) failure to gain weight • Sharp drop across growth chart centile lines **AND** **Clinical complications:** • Oedema of both feet[6] • Any danger sign or sign of severe disease (as above) • Failure to respond to previous outpatient-based nutritional care	***Pink:*** **COMPLICATED SEVERE ACUTE MALNUTRITION**	• **URGENT referral to inpatient care** • Treat clinical complications as per IMCI/ appropriate local guidelines • Parenteral antibiotics to treat possible sepsis • Specific inpatient nutritional support in parallel with other treatments (e.g. re-establishing effective exclusive breastfeeding using supplementary suckling)
		Severe Acute Malnutrition / MODERATE Nutritional Risk • WLZ <-3 **OR** • Moderate weight loss or recent (days-weeks) failure to gain weight • Moderate drop across growth chart centile lines **AND** Clinically stable / none of above clinical complications	***Yellow 1:*** **UNCOMPLICATED SEVERE ACUTE MALNUTRITION**	• **C-MAMI outpatient enrolment: Priority 1** • Course of broad-spectrum oral antibiotic, such as amoxicillin • Detailed assessment of underlying cause(s) of malnutrition + tailored action to address these • Plot & appraise growth chart for monitoring progress

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[5] There is growing evidence for use of MUAC in infants >2-<6 months. However, age and nutritional status classification cut-offs have not yet been established. For these reasons, MUAC data are not intended for use in classification. However, we do strongly urge agencies to measure and collect MUAC data to contribute to strengthen future evidence in this area.

[6] Nutritional oedema is rare in infants and therefore infants with oedema should always be admitted to investigate possible underlying medical cause.

I. C-MAMI Assessment for Nutritional Vulnerability in Infants aged <6 months (Infant)

ASSESS	CLASSIFY		ACT (MANAGE)
	Moderate Acute Malnutrition/SOME Nutritional Risk • WL Z >= -3 to <-2 **AND** **No clinical complications**	***Yellow 2:*** **UNCOMPLICATED MODERATE ACUTE MALNUTRITION**	**If resources allow:** • **C-MAMI enrolment: Priority 2** • Detailed assessment of underlying cause(s) of malnutrition + tailored action to address these • Plot & appraise growth chart for monitoring progress **If programme capacity limited** • No enrolment for time being • General nutrition/feeding advice • Plot growth chart to aid review • Review in 1-2 weeks to check whether has got better or worse (in which case enrol/step-up)

	None of the above	***Green:***
		LOW NUTRITIONAL RISK
			• **No C-MAMI enrolment**
			• Praise, support, reassure
			• General advice / counselling on:
			  • general IYCF / nutrition recommendations
			  • routine healthcare services e.g. vaccinations, growth monitoring
			• Advise to return if worsens or develops new problems

3. (B)reastfeeding Assessment

Note: If mother is not breastfeeding, refer to Appendix 1: Non-breastfeeding Assessment, Counselling and Support Actions

Ask, Listen	*Identify, Analyse*	Meets ANY of the criteria below	*Pink:*	
• Feeding history • Breastfed? How often? Any problems or concerns? • Other feeds: infant receives any water, other liquids or milk? When started? Infant receives any solid or semi-solid foods? When started?	• Structural abnormalities through physical examination (use clean/gloved finger to feel inside mouth for hidden cleft palate) • Muscular abnormalities • Breastfeeding based on observation	• Structural abnormalities (e.g. cleft lip/palate, or more complex conditions affecting the face, jaw and mouth) • Abnormality of tone, posture and movement interfering with breastfeeding • Unable to support head or trunk control • When held, infant's arms and legs fall to the sides • Infant's body stiff, hard to contain or move • Excessive jaw opening or jaw clenching • Not willing/able to suckle at the breast • Coughing and eye tearing (signs of unsafe swallowing) while breastfeeding	***SEVERE FEEDING PROBLEM/RISK***	• **URGENT referral to inpatient care** • Specialist referral for more detailed assessment and treatment of any structural problem • Specialist referral for more detailed assessment and support for any disability • Feeding support tailored to addressing main underlying problem (e.g. aim for re-establishment of effective exclusive breastfeeding wherever possible e.g. using supplementary suckling (page 23)

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I. C-MAMI Assessment for Nutritional Vulnerability in Infants aged <6 months (Infant)

ASSESS	CLASSIFY		ACT (MANAGE)
Feeding Assessment: Breastfeeding • Use **1st Line Breastfeeding Assessment Tool**	**Meets ANY of the criteria below** • Not well attached to the breast **OR** • Not suckling effectively **OR** • Less than 8 breastfeeds in 24 hours **OR** • Receives other foods or drinks	***Yellow 1:*** **MODERATE FEEDING PROBLEM**	• **C-MAMI enrolment: Priority 1** • Refer to **1st Line Breastfeeding Counselling and Support Actions** (page 9)
Feeding Assessment: Breastfeeding • Use **2nd Line Breastfeeding Assessment Tool**	**Breastfed infant meets ANY of the criteria below** • Breastfeeding difficulties based on mother's breast conditions • Non-severe respiratory difficulties interfering with breastfeeding e.g. nasal congestion	***Yellow 2:*** ***MILD / POSSIBLE FEEDING PROBLEM***	**If resources allow:** • **C-MAMI enrolment: Priority 2** • Refer to **2nd Line Breastfeeding Counselling and Support Actions** (page 11) • Plot & appraise growth chart for monitoring progress **If programme capacity limited** • No enrolment for time being • General nutrition/feeding advice • Plot growth chart to aid review • Review in 1-2 weeks to check whether has got better or worse (in which case enrol/ step-up)
	• No signs of inadequate feeding • Not acutely malnourished • No additional issues for mother-infant dyad	***Green:*** **NO FEEDING PROBLEM**	• **No C-MAMI enrolment** • Praise, support, reassure • General advice/counselling on: • general IYCF/nutrition recommendations • routine healthcare services e.g. vaccinations, growth monitoring • Advise to return if worsens or develops new problems
4. (C)linical Assessment			
Identify, Analyse • **Possible underlying clinical problems**	• Risk of HIV or tested HIV positive • Risk of TB or tested TB positive • Preterm or low birth weight		• Investigate and treat as per national / local guidelines

II. C-MAMI Assessment for Nutritional Vulnerability in Infants aged <6 months (Mother)

ASSESS	CLASSIFY		ACT (MANAGE)
1. (A)nthropometric/Nutritional Assessment			

CHECK FOR SEVERE MALNUTRITION
Identify, Analyse
Look for signs of severe malnutrition
• Measure MUAC (always)
• If equipment available and staff are trained:
  • Measure weight (in kg), height (in metres)
  • calculate BMI (= weight/height2)
• Pitting oedema of both feet
	Mother: Meets ANY of criteria below for severe malnutrition
	• MUAC: <180 mm (referral)[7]
	OR
	• BMI: <17
	OR
	• Pitting oedema of both feet
		Pink:
		SEVERE MATERNAL MALNUTRITION
			• REFER mother-infant DYAD to inpatient facility
			• Nutrition support for mother

	Mother: Meets ANY of criteria below for malnourished or ill
	• MUAC: 180 to <230 mm[8]
	OR
	• BMI <18.5[9]
		Yellow 1:
		MODERATE MATERNAL MALNUTRITION
			• Refer to **Counselling and Support Actions for Mother** (page 21)
			• Link between facility and community
			• Advise on:
			  • recommended nutrition practices
			  • recommended health services
			  • recommended care practices
			  • WASH practices
			  • Health education/information

	• **None of the above**	***Green:*** **NO IMMEDIATE NUTRITIONAL CONCERN**	• General nutrition advice and support, as resources allow

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[7] Some agencies and MoH protocols use <185mm to define severe malnutrition.
[8] Some agencies use a narrower <210mm cut off for moderate maternal malnutrition
[9] http://apps.who.int/bmi/index.jsp?introPage=intro_3.html

Classification	BMI (kg/m²)	
	Principal cut-off points	Additional cut-off points
Undeweight	<18.50	<18.50
Severe thinness	<16.00	<16.00
Moderate thinness	16.00 – 16.99	16.00 – 16.99
Mild thinness	17.00 –18.49	17.00 – 18.49
Normal range	18.50 – 24.99	18.50 – 22.99
		23.00 – 24.99

II. C-MAMI Assessment for Nutritional Vulnerability in Infants aged <6 months (Mother)

ASSESS		CLASSIFY		ACT (MANAGE)
2. (B)reastfeeding Assessment				
Ask, Listen • Feeding history	***Identify, Analyse*** • Breastfeeding based on observation & conversation • Non-breastfeeding based on observation & conversation	**Mother: Breastfeeding mother meets ANY of the indications for support below** • Re-lactating • Discharged from Supplementary Feeding Programme • Needs to express breastmilk and cup-feed • Breast conditions: engorgement; sore and cracked nipples; plugged ducts and mastitis; flat, inverted, large or long nipples; nipple pain; thrush • Perception of not having enough breastmilk • Other concerns: mother lacks confidence; concerns about her diet; working away from her infant **Mother: Non-breastfeeding mother meets ANY of the indications for support below:** • Concerns about meeting the nutritional needs of her infant • Working away from home • Delegating infant feeding and care to another	***Yellow 1:*** **MOTHER-INFANT DYAD ENROLLED IN C-MAMI**	**Breastfed infant: analysis & actions** • Refer to **2nd Line Breastfeeding Counselling and Support Actions** (page 11) • Refer to **Counselling and Support Actions for Mother** (page 21) **Non-breastfed infant: analysis & actions** • Refer to **Appendix 1: Non-breastfeeding Assessment, Counselling and Support Actions** (page 27)
3. (C)linical Assessment				
• Clinical problems in mother • Birth history of presenting infant		• Anaemia • Tested HIV positive • Tested TB positive • Twin delivery (presenting infant/children) • History of poor pregnancy outcomes (presenting infant low birth weight (LBW)) • Adolescent mother (under 19 years) of presenting infant	***Yellow 1:*** **MOTHER-INFANT DYAD ENROLLED IN C-MAMI**	• Ensure mother is referred for or receiving appropriate treatment for underlying condition (e.g. antiretroviral drugs for HIV; iron supplementation for anaemia) • Emphasise importance of adherence to ART for mother's health and to reduce HIV transmission risk to infant • Refer to **2nd Line Breastfeeding Counselling and Support Actions** (page 11)
4. (D)epression/Anxiety/Distress				
		Mother • Mother traumatised, in emotional crisis, rejecting infant • Depressed (feels alone/no social support, unsatisfied, has little decision-making, has little power over life) • Gender based violence • Marital conflict	***Pink:*** **SEVERE MATERNAL DEPRESSION/ ANXIETY/ DISTRESS**	• REFERRAL to facility to conduct clinical assessment: for example - WHO (Five) Well-Being Index (www.who-5.org) • REFERRAL to facility for community support
		Mother • Lack of care and social support	***Yellow 1:*** **MOTHER-INFANT DYAD ENROLLED IN C-MAMI**	• Refer to **Family and Community Counselling and Support Actions for Mother** (page 11) • Support during pregnancy • Group support • Family support • Partner support • Community support

Annex 19: Computation of Locally Prepared Food (Comparable to RUSF):

Using the Food Exchange List in Meal Planning (DOST-FNRI, Food Exchange List For Meal Planning, 2012), below is the instruction on how to compute for the energy and nutrient content of the locally prepared foods to make it comparable to RUSF.

Table 1. Composition of Food Exchanges

List Food		Measure	CHO (g)	PRO (g)	Fat (g)	ENERGY	
						(kcal)	(kj)
I.A.	Veg. A	1 cup raw	-	-	-	-	-
		½ cup, cooked	-	-	-	-	-
I.A.	Veg. A	2 cups raw	3	1	-	16	67
		1 cup cooked Or					
I.B	Veg. B	½ cup, raw	3	1	-	16	67
		½ cup cooked					
II.	Fruit	Varies	10	-	-	40	167
III.	Milk						
	whole	Varies	12	8	10	170	711
	Low fat	4 tablespoons	12	8	5	125	523
	Skimmed	Varies	12	8	tr	80	335
IV	Rice	Varies	23	2	-	100	418
V	Meat						
	Low fat	Varies	-	8	1	41	172
	Med. Fat	Varies	-	8	6	86	360
	High Fat	Varies	-	8	10	122	510
VI.	Fat	1 teaspoon	-	-	5	45	188
VII.	Sugar	1 teaspoon	5	-	-	20	84

The steps in calculating the energy and nutrient content of the locally prepared foods are as follows:

1. Allow 1 exchange of meat of any variety to accommodate the protein content of carbohydrate rich foods
2. To determine how many fat exchanges are allowed.
    a. Add the fat furnished the food groups already listed.
    b. Subtract this sum from the prescribed fat.
    c. Divide the difference by 5 (g Fat per exchange)
3. To determine the prescribed grams for carbohydrate.
    a. Add the kcal furnished by the foods already listed.
    b. Subtract this sum from the prescribed energy (kcal)
    c. Divide the difference by 4 (1 g of Carbohydrate contains 4 kcal).
    d. To determine the no. of rice exchanges.
        a. List all the foods furnishing carbohydrates with the exception of rice, i.e., vegetables, fruit, milk and sugar.
        b. Add CHO from vegetables, fruit and sugar.
        c. Subtract this sum from the prescribes CHO
        d. Divide the difference by 23 (g CHO furnished by 1 rice exchange).

The nearest whole quotient is the number of rice exchange allowed.

Four sample calculations are presented below to illustrate the different food items that can be chosen in the preparation of locally prepared foods. The food items, menus and measurements of food can be altered depending upon the availability and cultural acceptability of the foods. It is important to check that the total calorie and macronutrients (protein, fat, and carbohydrates) are within the recommended range. In addition, MNP should be given as prescribed to meet micronutrient adequacy.

SAMPLE COMPUTATION 1 Locally prepared food (comparable to RUSF)

Diet prescription: 510-560 kcal; 11-16 g Protein; 26-36 g Fat

Food	No. of Exchanges	CHO (g)	PRO (g)	Fat (g)	Energy (kcal)
Meat (medium Fat)	**1**	**-**	**8**	**6**	**86**
26 (prescribed Fat)					
-6 (partial sum of Fat)					
20 ÷ 5 = 4 no. of exchanges of Fat					
Fat	**4**	**-**	**-**	**20**	**180**
510 (prescribed energy in kcal)					
-266 (partial sum of energy from protein and fat)					
244 kcal from carbohydrate					
244 ÷ 4 = 61 g (prescribed Carbohydrate)					
61 ÷ 23 = 3 no. of exchanges of rice					
Rice	**3**	**69**	**6**	**-**	**300**
TOTAL		**69**	**14**	**26**	**566**
MENU 1: Arroz Caldo with Egg					
Main ingredients: Rice gruel, egg, oil					

SAMPLE COMPUTATION 2 Locally prepared food (comparable to RUSF)

Diet prescription: 510-560 kcal; 11-16 g Protein; 26-36 g Fat

Food	No. of Exchanges	CHO (g)	PRO (g)	Fat (g)	Energy (kcal)
Meat (medium Fat)	**1**	**-**	**8**	**6**	**86**
26 (prescribed Fat)					
-6 (partial sum of Fat)					
20 ÷ 5 = 4 no. of exchanges of Fat					
Fat	**4**	**-**	**-**	**20**	**180**
510 (prescribed energy in kcal)					
-266 (partial sum of energy from protein and fat)					
244 kcal from carbohydrate					
244 ÷ 4 = 61 g (prescribed Carbohydrate)					
Vegetable B	**3**	**9**	**3**	**-**	**48**
61 (prescribed CHO) **-9 (partial sum of CHO)** **52 g of carbohydrate** **52÷23 = 2 no. of exchanges of Rice**					
Rice	**2**	**46**	**4**	**-**	**200**
TOTAL		**55**	**15**	**26**	**514**
MENU 2: Squash Congee **Main ingredients: Squash, rice gruel, egg, oil**					

SAMPLE COMPUTATION 3 Locally prepared food (comparable to RUSF)

Diet prescription: 510-560 kcal; 11-16 g Protein; 26-36 g Fat

Food	No. of Exchanges	CHO (g)	PRO (g)	Fat (g)	Energy (kcal)
Meat (medium Fat)	**1**	**-**	**8**	**6**	**86**
26 (prescribed Fat)					
-6 (partial sum of Fat)					
20 ÷ 5 = 4 no. of exchanges of Fat					
Fat	**4**	**-**	**-**	**20**	**180**
560 (prescribed energy in kcal)					
-266 (partial sum of energy from protein and fat)					
294 kcal from carbohydrate					
244 ÷ 4 = 74 g (prescribed Carbohydrate)					
Vegetable A	**1**	**3**	**1**	**-**	**16**
Vegetable B	**1**	**3**	**1**	**-**	**16**
74 (prescribed CHO) **-6 (partial sum of CHO)** **68 g of carbohydrate** **68÷23 = 3 no. of exchanges of Rice**					
Rice	**3**	**69**	**6**	**-**	**300**
TOTAL		**75**	**16**	**26**	**598**
MENU 3: Fried Rice					
Main ingredients: Rice, egg, chayote, carrots, oil					

SAMPLE COMPUTATOIN 4 Locally prepared food (comparable to RUSF)

Diet prescription: 510-560 kcal; 11-16 g Protein; 26-36 g Fat

Food	No. of Exchanges	CHO (g)	PRO (g)	Fat (g)	Energy (kcal)
Meat (medium Fat)	**1**	**-**	**8**	**6**	**86**
26 (prescribed Fat)					
-6 (partial sum of Protein)					
20 ÷ 5 = 4 no. of exchanges of Fat					
Fat	**4**	**-**	**-**	**20**	**180**
560 (prescribed energy in kcal)					
-266 (partial sum of energy from protein and fat)					
294 kcal from carbohydrate					
294 ÷ 4 = 74 g (prescribed Carbohydrate)					
Fruit	**1**	**10**	**-**	**-**	**40**
Sugar	**3**	**15**	**-**	**-**	**60**
	Partial Sum = 25				
74 (prescribed CHO) **-25 (partial sum of CHO)** **49 g of carbohydrate** **49÷23 = 2 no. of exchanges of Rice**					
Rice	**2**	**46**	**4**	**-**	**200**
TOTAL		**71**	**16**	**26**	**521**
MENU 4: Ginataang Bilo-bilo					
Main ingredients: Rice flour, sweet potato, red beans, saging na saba, coconut cream, sugar					

Annex 20. THE FOOD EXCHANGE LISTS FOR MEAL PLANNING (DOST-FNRI PUBLICATION No. 57-ND 8(3)

For easeness in the selection of food items in the planning and preparation of the recipe of the locally prepared foods, selected items in the Food Exchange List are shown below.

Table 1. Vegetable Group A Exchange Equivalents (FEL page 22)

Vegetable Group A (1 Exchange = 1 cup raw or 1/2 cup cooked)	
Acelgas (Chinese Cabbage)	**Katuray leaves (1)**
Alagaw leaves (1)	**Lettuce (2)**
Alugbati leaves (2)	**Malunggay leaves**
Ampalaya leaves (2)	**Malunggay pods**
Ampalya fruit	**Mushroom, fresh**
Baguio beans (abitsuelas)	**Mustard leaves (2)**
Balbalulang (seaweed) (1)	**Okra**
Bamboo shoot (labong)	**Onion bulb**
Banana heart (puso na saging)	**Papaya green**
Bataw pods (1)	**Patola**
Cabbage	**Pepper fruit**
Camote leaves (2)	**Peppper leaves (2)**
Cauliflower	**Petsay (2)**
Celery	**Pokpoklo (seaweed)**
Chayote fruit (2)	**Radish**
Chayote leaves	**Saluyot (1) (2)**
Cucumber	**Sigarilyas pods**
Eggplant	**Squash flowers (2)**
Gabi leaves (1) (2)	**Squash leaves (1)**
Garlic leaves (1)	**String beans leaves (sitaw, dahon) (2)**
Kangkong (2)	**Sweet pea pods (sitsaro)**
Katuray flowers (1)	**Tomato (2)**
	Upo
1 These vegetables are rich sources of fiber 2 These vegetables are rich sorces of pro vitamin A	

Table 2. Vegetable Group B Exchange Equivalents (FEL page 23)

Vegetable Group B (1 Exchange = ½ cup raw or ½ cup cooked)
Carrot
Coconut shoot (ubod)
Cowpea pods (paayap bunga)
Kamansi
Lima bean, pods (patani, bunga)
Mungbean sprout (toge)
Pigeon pea pods (kadyos, bunga)
Squash fruit
String beans pod (sitaw bunga)

Table 3. Fruit Exchange Equivalents (FEL page 25-28)

Fruits	1 Exchange Equivalents
Apple	1/2 of 8 cm diameter or 1 (6cm diameter)
Atis (3)	1 (5 cm diameter)
Balimbing (1)	1-1/2 of 9 x 5 cm
Banana: Lakatan	1 (9 x 3 cm)
Banana: Latundan	1 (9 x 3 cm)
Banana: Saba	1 (10 x 4 cm)
Cashew	1 (7 x 6-1/2 cm)
Chico	1 (4 cm diameter)
Dalanghita	2 (6 diameter each)
Datiles	1 cup
Duhat	20 (2cm diameter each)
Durian	1 segment of 6-1/2 x 4-1/2 cm
Grapes	10 (2 cm diameter each) / 4 (3 cm diameter each)
Guava	
Guyabano	2 (4 cm diameter each)
Jackfruit ripe	1 slice (8 x 6 x 2 cm) or 1/2 cup
Kamachile	3 segments (6 cm diameter each)
Lansones	7 pods
Mabolo	7 (4 x 2 cm each)
Makopa	2/3 of 6 cm diameter)
Mango: Green	3 (4 cm diameter each)
Mango: Medium ripe	1 slice (11 x 6 cm)
Mango: Ripe	1 slice (11 x 6 cm)
Mango Indian	1 slice (12 x 7 cm) or 1/2 cup cubed
Mangosteen	1 (6 cm diameter)
Marang	3 (6 cm diameter each
Melon	1/2 of 12 x 10 cm
Papaya ripe	1 slice (12 x 10 x 3 cm) or 1-1/3 cup
Pineapple	1 (6 cm diameter)
Rambutan	1slice (10 x 6 x 2 cm) or 1/2 cup
Santol	8 (3 cm diameter each)
Singkamas tuber	1 (7 cm diameter)
Siniguelas	1/2 of 9 cm diameter or 1 cup
Star apple	5 (3 cm diameter each)
Strawberry	1/2 of 6 cm diameter
Suha	1-1/4 cups
Tamarind	3 segments (8 x 4 x3 cm each)
Tiesa	2 of 6 segments each
Watermelon	1/4 of 10 cm diameter 1 slice (12 x 6 x 3 cm) or 1 cup

Table 4. Low Fat Meat and FishExchange Equivalents (FEL page 38-41)

Low Fat Meat and Fish Exchanges	1 Exchange Equivalents
1. Lean Meat	
a. Beef: Shank (bias), lean meat (laman), Round (pierna corta at pierna larga)	1 slice, matchbox size (5x3-1/2x1-1/2 cm)
b. Carabeef Shank (bias), round (hita), meat (laman:bahagya, katamtaman at walang-taba), shoulder (paypay), round (pierna corta at pierna larga), rump (tapadera)	1 slice, matchbox size (5x3-1/2x1-1/2 cm)
c. Lean Pork Tendeloin, well trimmed	1 slice, matchbox size (6-1/2 x 3 x 1-1/2 cm)
d. Chicken: leg (hita) or	1 small leg (13-1/2cm long x 3cm diameter)
meat (laman) or	1 slice, matchbox size (5 x 3-1/2 x 1-1/2cm)
breast meat (pitso)	¼ breast – 6 cm long
2. Variety Meats / internal organs:	¾ cup
Blood (dugo)- pork, beef, chicken	
Heart (puso)- pork, beef, carabeef	
Liver (atay)-pork, beef, carabeef, chicken	
Small intestine (bitukang maliit)-pork, beef, carabeef	
Spleen(lapay)- pork, beef, carabeef	
Tripe (goto)-beef	
3. Fish:	
Large Variety (e.g. bakoko, bangus, dalag, labahita, lapu-lapu, etc.)	1 slice (7x3x2 cm)
Medium variety:	
Hasa-hasa, dalagang bukid	
Galunggong	1 (18x4-1/2 cm)
Hito	1 (14x3-1/2 cm)
	½ of 22 x 5cm
Small variety:	
Sapsap	
Tilapya	2 (10x5 cm each)
Tamban	2 (12x5cm each)
Dilis	2 (12-1/2x3 cm each)
	¼ cup
4. Other Seafoods:	
Alamang, tagunton	
Aligue: Alimango	1-1/4 tablespoons
Alimasag	1 tablespoon
Alimango/alimasag, laman	3 tablespoons
Talangka	¼ cup or ½ piece medium
Shrimps: Puti	75 pieces A.P.
Sugpo	5 (12 cm each)
Suwahe	2 (13 cm each)
Squid (pusit)	5 (12 cm each)
Shells: halaan	3 (7x3 cm each)
Kuhol	1/3 cups shelled or 3 cups with shell
Susong Pilipit	1/3 cup shelled or 2 cups with shell
Paros	1/3 cup shelled or 2 cups with shells
	1 cup shelled or 2-2/3 cups with shell

5. Beans: **Pigeon pea seeds, dried (kadyos, buto, tuyo)**	1/3 cup

Table 5. Medium Fat Meat and Fish Exchange Equivalents (FEL page 42-43)

Medium Fat Meat and Fish Exchanges	1 Exchange Equivalents
1. Medium Fat Meat **Beef: Flank (kabilugan), Brisket (punta y pecho), plate (tadyang), Chuck (paypay)**	1 slice, matchbox size (5 x 3 – ½ x 1-1/2 cm)
Pork: Leg (pata	1 slice (4 cm diameter x 2 cm thick)
2. Variety Meats / internal organs: **Brain (utak) –pork, beef, carabeef**	3/4 cup
3. Fish: Karpa	1 slice (15 x 7 x 2 cm)
4. Egg: **Chicken** **Quail's egg** **Salted duck's egg**	 1 pc 9 pcs 1 pc
5. Chicken **Wings (pakpak)** **Head (ulo)**	 1 medium or 2 small 2 heads
6. Beans: Soybean (utaw) **Soybean cheese, soft (tofu)** **Soybean cheese, hard (tokwa)**	1/2 cup 1/2 cup 1 (6 x 6 x 2 cm)

Table 6. High Fat Meat and Fish Exchange Equivalents (FEL page 4)

High Fat Meat and Fish Exchanges	1 Exchange Equivalents
1. Pork **Ham (pigue)**	 1 slice (3cm cube)
2. Variety Meats / internal organs: **Tongue (dila) – beef**	1 slice, matchbox size (3 cm cube)
3. Egg: **Duck's egg** **Balut** **Penoy**	 1 piece 1 piece 1 piece
4. Nuts **Peanuts, roasted**	 1/3 cup

Table 7. Fat Exchange Equivalents(FEL page 45-46)

Fat	1 Exchange Equivalents
Saturated Fats:	
Butter	1 tsp
Coconut, grated	2 tbsps
Coconut, cream	1 tbsp
Coconut oil	1 tsp
Latik	2 tsps
Margarine	1 tsp
Mayonaise	1 tsp
Sandwhich spread	1 tbsp
Polyunsaturated Fats:	
Oil (corn, marine, soybean)	1 tsp
Monounsaturated Fats:	
Avocado	1/2 of 12 x 7 cm
Peanut Butter	2 tsps
Pili nut	5 pcs
Peanut oil	1 tsp
Shortening	1 tsp

Table 8. Rice Exchange Equivalents (FEL page 31-35)

Rice Exchanges	1 Exchange Equivalents
A. Rice and rice products	
1. Rice cooked	½ cup, packed
2. Rice gruel (lugaw)	
**** thin consistency**	4-1/2 cups
***medium consistency**	3 cups
****thick consistency**	1-1/2 cups
3. Rice Products	
Native kakanin:	
Ampaw: Pinipig	3(9x3-1/2x2 cm each)
Rice	1 (9x3-1/2x2 cm)
Bibingka: Galapong	1 slice (1/2 of 15 cm diameter, 2 cm thick)
Malagkit	1 slice (6x3x3cm)
Biko	1 slice (10x5x1 cm)
Cassava cake	½ of 15x3x2 cm
Espasol	2(11x2-1/2x1-1/2 cm each)
Kalamay: Latik	1 (4x6x2cm)
Ube	1 slice (7x3x1-1/2 cm)
Kutsinta	1 (6 cm diameter x 2-1/2 cm)
Palitaw, walang niyog	4 (7-1/2x4x0.3 cm each)
Puto: Bumbong	2(11x2x1 cm each)
Pula	3 (4x3cm each)
Puti	1 slice (9-1/2x3x3-1/2cm) or 1-1/2 round of 5 cm diameter x 3 cm thick
Seko, bilog	3(3-1/2 cm diameter1-1/2 cm thick each)
Seko, haba,May niyog[a]	5(5 cm longx2 cm diameter each)
Sapin-sapin	1 slice (5x3x4 cm)
Suman: Ibos	1 (8x4x2 cm)
Kamoteng kahoy	½ of 15x3x2cm
Lihiya[a]	1 (8x4x2 cm)
Marwekos[a]	2(9x3x2cm each)
Tamales	2(7x6 cm each)
Tikoy	1 slice (10x3x1-1/2 cm)
Tupig	½ of 14x3x1 cm
B. Rice Equivalents	
1. Bread	
Pan amerikano	2(9x8x1cm each)
Pan de bonete[a]	1(6 cm diameter basex7 cm thick)
Pan de leche	1(3x8x8cm)
Pan de limon	1(6x5x4 cm)
Pan de monay	1(10x9x4cm)
Pan de sal	3(5x5cm each)
Rolls (hotdog/hamburger)	1 (11x4x3cm)
Whole wheat bread[a]	2(11-1/2 x 8-1/2x1 cm each)
2. Bakery Products	
Cookies:	
Galyetas de patatas	10(4x4x1/2 cm diameter each)
Pasensiya	22(3 cm diameter each)
Masapudrida	1(7x1cm)
Marie	22(4-1/2 cm diameter x0.3 cm thick each)
Lady fingers	5(9x4 cm each)
Others	
Apas	6(1-1/2x12 cm each)
Mamon tostado	3(8x3x3 cm each)
Hopia	1-1/2 of 3x2-1/2x2-1/2 cm diced or ½ of 7 cm diameterx1-1/2cm thick round

Ensaymada	1(8-1/2 cm diameter x 2 cm thick)
3. Corn and Corn products	
Binatog[a]	½ cup
Corn, boiled	1(12x4cm)
Maha, mais	1 slice (5x4x2cm)
4. Noodles, cooked:	1 cup
Bihon, macaroni,[a]	
Sotanghon, spaghetti	
5. Rootcrops	
Sweet potato	½ of 11 cm long x 4-/2 cm diameter or ½ cup
Cassava [a]	1 (5cm longx4-1/2 cm diameter each) or 1 cup
	2(6cm long x 4 cm diameter each) or 1 cup
Gabi	2-1/2 of 7 cm long x 4 cm diameter each or 1-1/3 cup
Potato	
Ubi [a]	1(8-1/2 cm long x 4-1/2 cm diameter) or 1-1/3 cup
6. Others	½ cup cooked
Sago cooked	

** ½ cup cooked rice + 5 cups of water
*** ½ cup of cooked rice + 3 cups of water
*** ½ cup cooked rice + 2 cups water
[a] These foods are good sources of fiber

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