

Food and Nutrition Security in Disasters



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Learning Objectives

- Learn how to Assess Food Security in Crisis Situations
- Learn How to Identify Malnutrition
- Review WHO Treatment Guidelines for Severe and Moderate Acute Malnutrition in Children under 5.

Emergency Food Security Assessment

Emergency Food Security Assessment Handbook

second edition



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The purpose of an Emergency Food Security Assessment is to assess the impact of shock on the food security of households and communities within the affected area.

Famine is declared when malnutrition is widespread, and when people have started dying of starvation through lack of access to sufficient, **nutritious food**. Inequality is a critical factor, with low incomes in particular putting affordable food beyond the reach of millions.

[WFP Hunger Map Live](#)



Key Questions

- Does the shock have an impact on food security?
 - How does the crisis situation compare with pre-crisis? Is the population food insecure?
- Has the level of malnutrition among the population been exacerbated by the shock?
 - Is the population likely to remain or become food-insecure or malnourished in the future?
- How severe is the problem?
 - How severe is food insecurity and/or malnutrition?
- How do people cope?
 - Are the affected people able to cope with the problems on their own, without becoming more food-insecure and malnourished?

Key Questions cont.

- **Who? How many? Where?**
 - Which population groups are more food-insecure and/or malnourished now? Which may groups may become so in the future?
 - How many people are affected now? How many may be affected in the future?
 - Where are these people located?
- **Why?**
 - What are the causes of present and future food insecurity and malnutrition?
- **What is needed?**
 - Can the affected people cope with and recover unaided? Are they already receiving assistance?
 - Is additional assistance needed? If so what type? For whom? When? Where? How much? For how long?
 - Can the government and national organizations provide this assistance or is international assistance required?
 - What is the appropriate response?

Core Concepts

- Livelihoods

- “Livelihoods comprise capabilities, assets (including both material and social resources and activities required for a means of living linked to survival and future well-being.” “Humanitarian Charter and Minimum Standards in Disaster Response,” *The Sphere Project*, Geneva, 2004.

household livelihood strategy.

Example 1.1: Assets and strategies

A household has the following asset profile:

- human: healthy and able-bodied men and women of working age; good knowledge of agriculture.
- social: well connected within the community.
- financial: low cash reserves.
- physical: few productive assets.
- natural: no land.
- political: no local representatives at the national level.

Assets are used to form a livelihood strategy:

- The household might use its strong social assets to obtain loans with which to rent land and buy tools and agricultural inputs. This enables it to utilize its human assets to cultivate and compensate for the low levels of financial and natural assets.

Core concepts cont.

- **Food Security**

- “Food security exists when all people, at all times, have physical and economic access to sufficient, safe, and nutritious food to meet their dietary needs, and food preferences for an active and healthy life.” World Food Summit, 1996
- **Food availability:** physical availability of food in the area through production, trade, stocks, transfers
- **Food access:** Household ability to acquire adequate amounts of food through home production / stocks, purchase, barter, gifts, borrowing, and food aid.
- **Food utilization:** Household utilization of food to which they have access and individual ability to absorb and metabolize nutrients.
- **Stability** – food is present at all times in terms of availability, access & utilization

Core Concepts cont.

- **Nutrition Security**

- “Food insecurity is one of three underlying causes of malnutrition [the others being health and care practices], and therefore wherever there is food insecurity there is a risk of malnutrition, including micronutrient deficiencies. Consideration of the impact of food insecurity on the nutrition situation is an essential part of food security assessment. However, it should not be assumed that food insecurity is the sole cause of malnutrition, without considering possible health and care causal factors.” The Sphere Project, Geneva, 2004

- **Food Security**

- **Health Status and the Public Health Environment**

- Body’s ability to absorb nutrients which can be impacted by sickness and diarrhea
- Hygiene practices, access to clean water, sanitation, waste disposal systems

- **Care practices**

- The way in which dependent household members are fed and cared for (babies, young children, disabled, elderly, food distribution within the household)

Figure 1.1: The Food and Nutrition Security Conceptual Framework

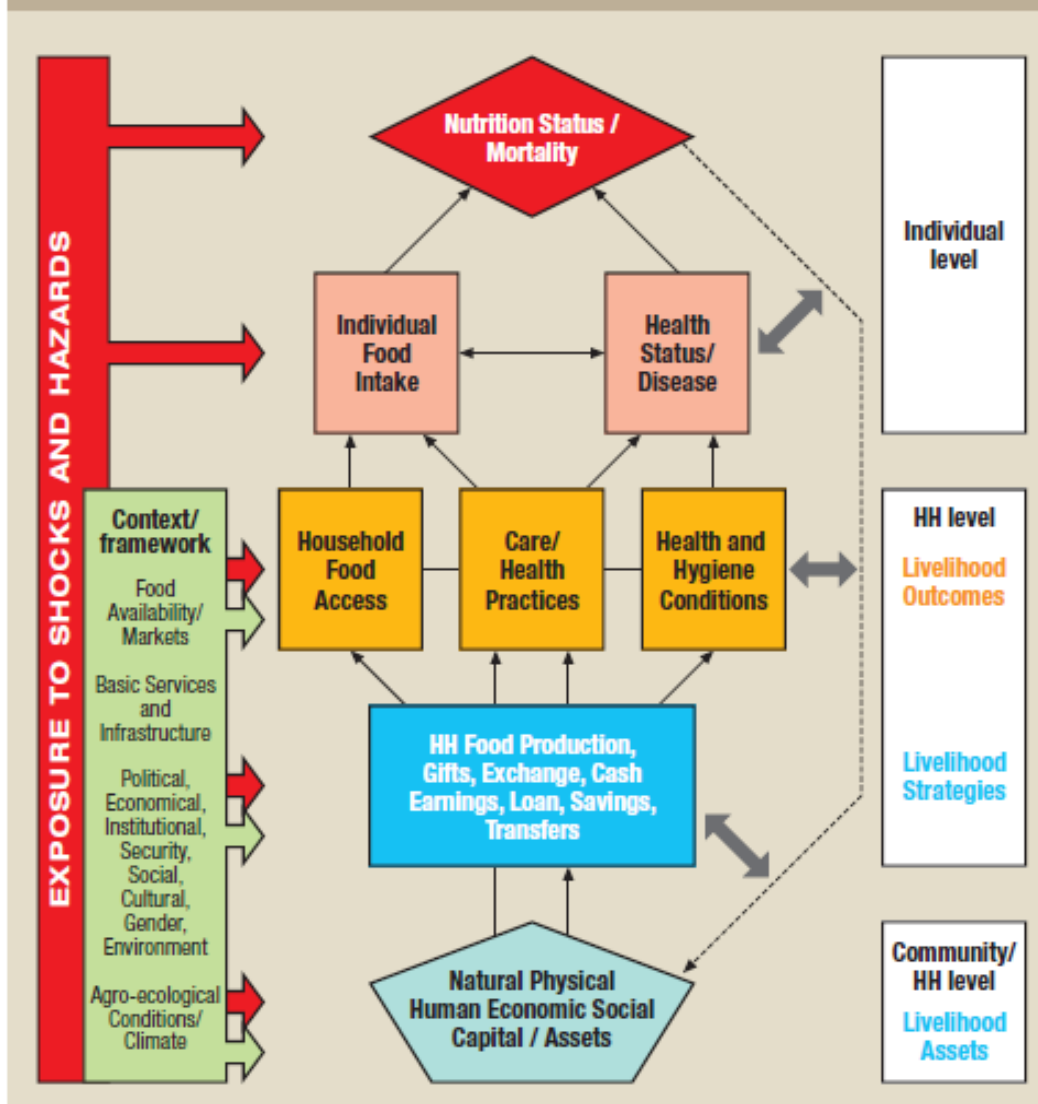


Table 1.1: Inter-agency assessments

Assessment	Main partners	Context
Joint assessment mission (JAM)	WFP – UNHCR	Refugee and IDP situations
Crop and food security assessment mission (CFSAM)	WFP – FAO	Agricultural areas affected by crisis
United Nations Disaster Assessment and Coordination Team (UNDAC)	WFP – governments – other United Nations agencies – NGOs	Large-scale natural disasters
Consolidated Appeal Process (CAP)	WFP – OCHA – governments – other United Nations agencies – governments – NGOs	Large-scale natural or human-induced disasters
Post-conflict needs assessment (PCNA)	WFP – World Bank – UNDP – other United Nations agencies – governments	Post-conflict recovery and reconstruction



FEMA



ICRC

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Figure 2: Food Inflation Heat Map

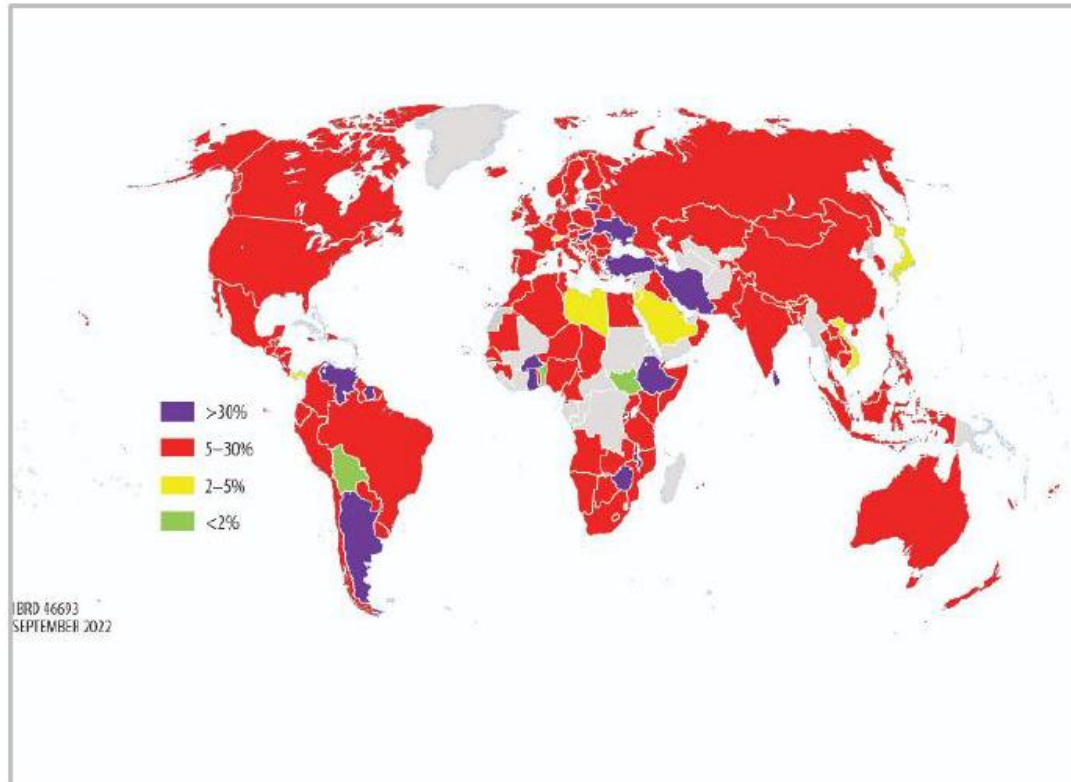
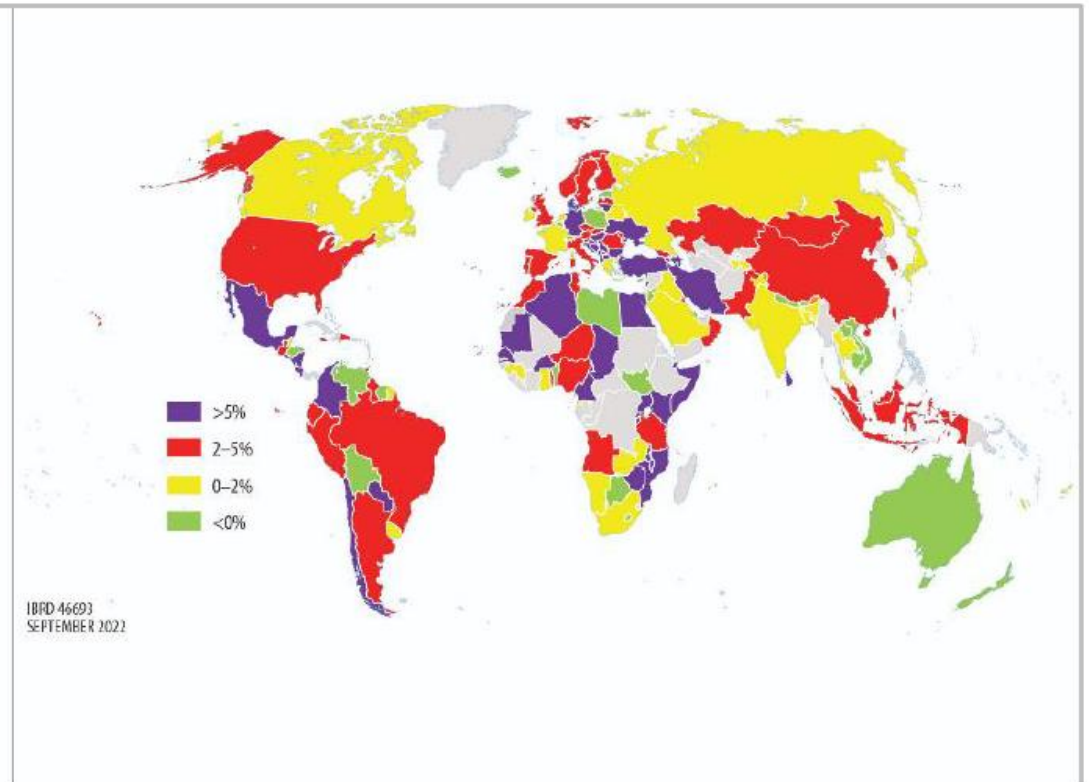


Figure 3: Real Food Inflation Heat Map



Source: International Monetary Fund, Haver Analytics, and Trading Economics.

Note: Food inflation for each country is based on the latest month from May to August 2022 for which the food component of the Consumer Price Index (CPI) and overall CPI data are available. Real food inflation is defined as food inflation minus overall inflation.

The World Bank Food Security Update September 15, 2022

<https://thedocs.worldbank.org/en/doc/40ebbf38f5a6b68bfc11e5273e1405d4-0090012022/related/Food-Security-Update-LXIX-September-15-2022.pdf>

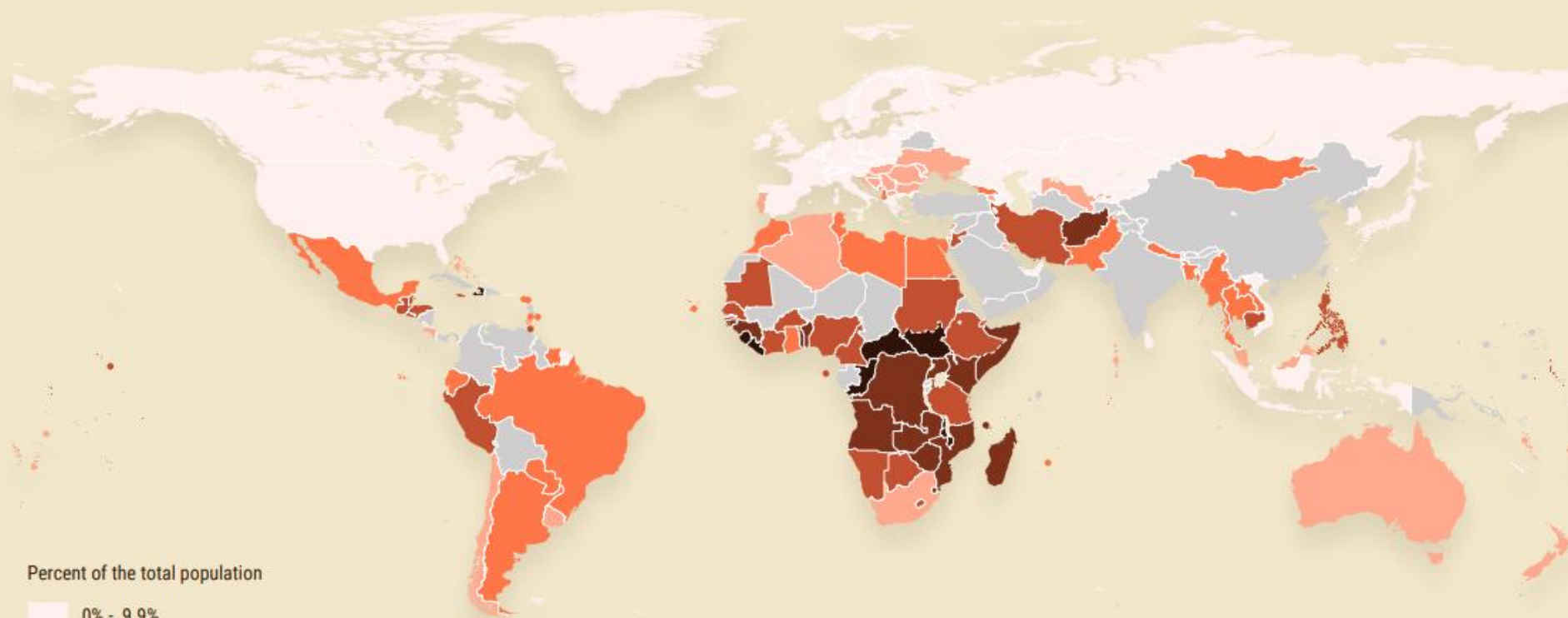


Food and Agriculture
Organization of the
United Nations

FAO FOOD INSECURITY MAP

Prevalence of Moderate or Severe Food Insecurity

SDG Indicator 2.1.2



Percent of the total population

0% - 9.9%

10% - 24.9%

25% - 39.9%

40% - 59.9%

60% - 79.9%

80% - 100%

Data not available or not country validated

Source: FAO, IFAD, UNICEF, WFP and WHO, 2022. *The State of Food Security and Nutrition in the World 2022. Repurposing food and agricultural policies to make healthy diets more affordable.* Data are available on FAOSTAT (<https://www.fao.org/faostat/en/#data/FS>)

The boundaries and names shown and the designations used on these map(s) do not imply the expression of any opinion whatsoever on the part of FAO concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers and boundaries. Dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

Final boundary between the Republic of Sudan and the Republic of South Sudan has not yet been determined. Dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties.



“Facing Food Insecurity on the Front Lines” by Sara Aridi *The New York Times* April 10, 2020



A recent statewide survey, conducted in April by Hunger Free Colorado, found **1 in 3 (33%) of Coloradans are food insecure**, meaning they lack reliable access to nutritious food.

Even more startling is the clear inequities along racial and demographic lines when examining hunger and income loss. Long-standing disparities in access to healthy food have grown dramatically due to the pandemic and **43% of non-white and Latinx individuals** are now struggling to put food on the table, compared to **29% of white Coloradans**.

Households with children also remain at the forefront of Colorado's hunger crisis, with 44% unable to consistently put healthy food on the table, posing risks to the long-term health and well-being of hundreds of thousands of children across the state. Among households with children, **30% of adults reported having to regularly cut back or skip meals** because there wasn't enough money to buy food.

<https://hungerfreecolorado.org/partner-with-us/initiatives/public-health-insecurity-survey/>

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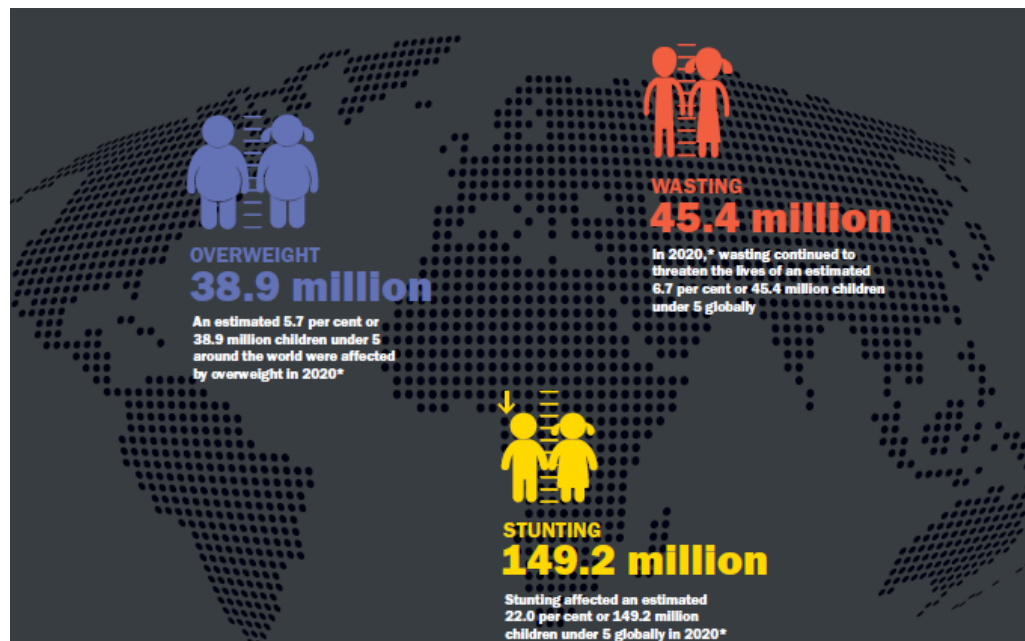
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Assessment and Treatment of Malnutrition

Vulnerable Groups

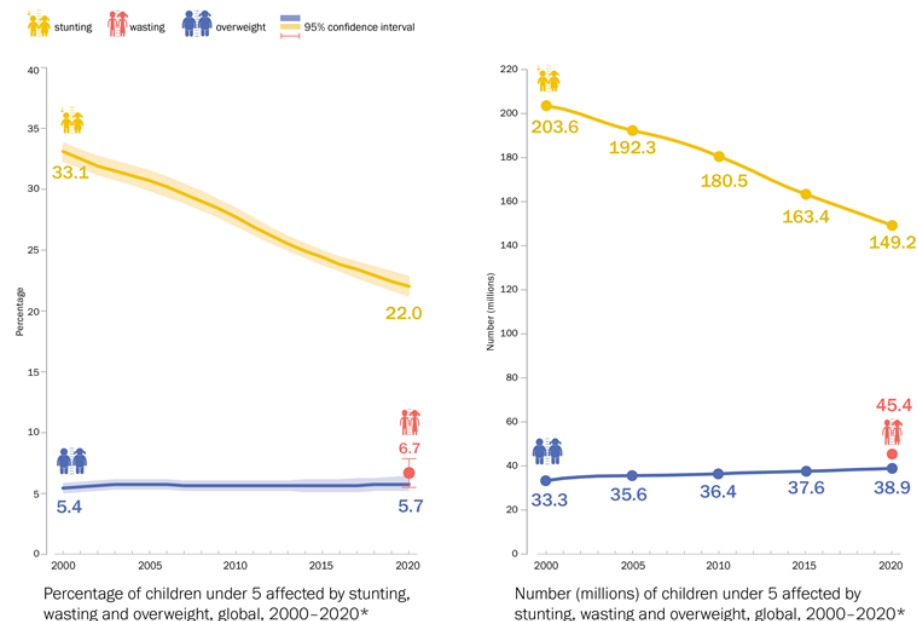
- **Children < 5 years**
- Children removed from their family or community
- Pregnant or Lactating Women
- Families supported only by women
- Physically or Emotionally Disabled
- Individuals with Chronic Disease
- Elderly
- Families having lost their home or job as a result of the disaster

Current Trends in Childhood Malnutrition



GLOBAL OVERVIEW

Stunting has declined steadily since 2000 – but faster progress is needed to reach the 2030 target. Wasting persists at alarming rates and overweight will require a reversal in trajectory if the 2030 target is to be achieved.



Source: UNICEF, WHO, World Bank Group Joint Malnutrition Estimates, 2021 edition. See section about regional and global estimates on page 27 for an explanation of why only one time point is presented for wasting on the graphs above.

Resources

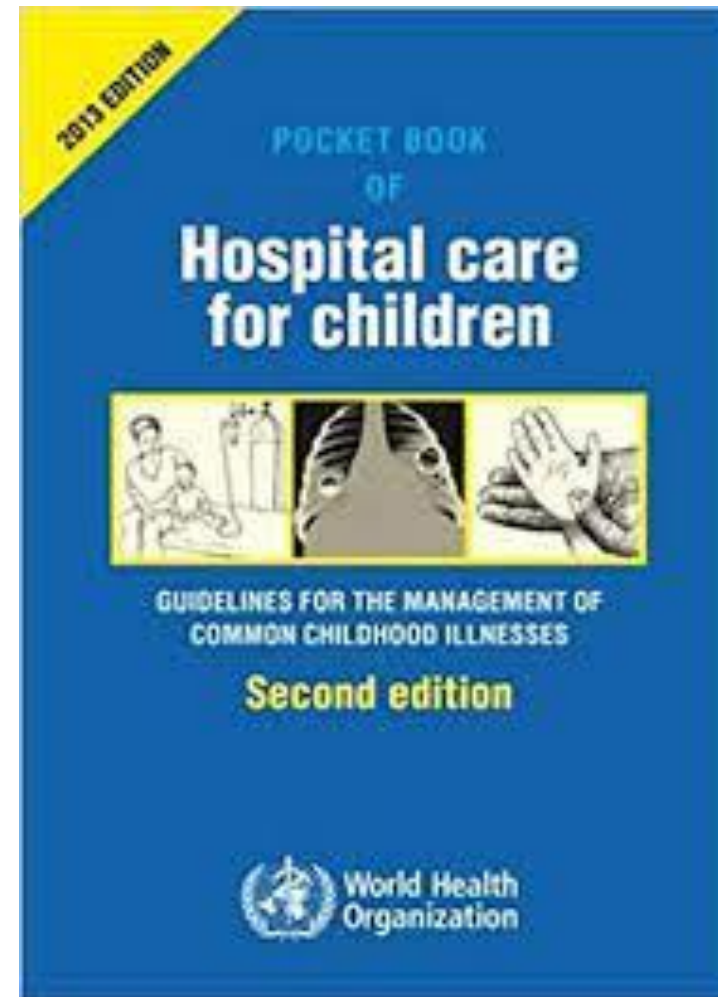
WHO guideline on the prevention and management of wasting and nutritional oedema (acute malnutrition) in infants and children under 5 years

Main editor
World Health Organization

1.1 published on 07.07.2023



World Health Organization (WHO)



2023 GUIDELINE

2013 GUIDELINE

MANAGEMENT OF WASTING AND NUTRITIONAL OEDEMA

INFANTS <6 MONTHS

At risk of poor growth
and development

Severe wasting /
nutritional oedema (SAM)

INFANTS & CHILDREN 6-59 MONTHS WITH WASTING

Moderate
wasting (MAM)

PREVENTION OF WASTING AND NUTRITIONAL OEDEMA

Identification of Malnutrition

Nutritional Status	MUAC*	W/H z-score	Bilateral Edema
Moderate Acute Malnutrition	115-125 mm	-2 to -3 SD	
Severe Acute Malnutrition	< 115 mm	$\leq$ -3 SD	X

- *MUAC <110 mm may be used to identify infants between 6 weeks and 6 months at risk for poor growth and development.
- W/A Z-score < -2 may be used to identify infants <6 months at risk for poor growth and development.
- W/A Z-score < -3 may be used to identify children 6 – 59 months who should be prioritized for specially formulated foods.



Measuring MUAC

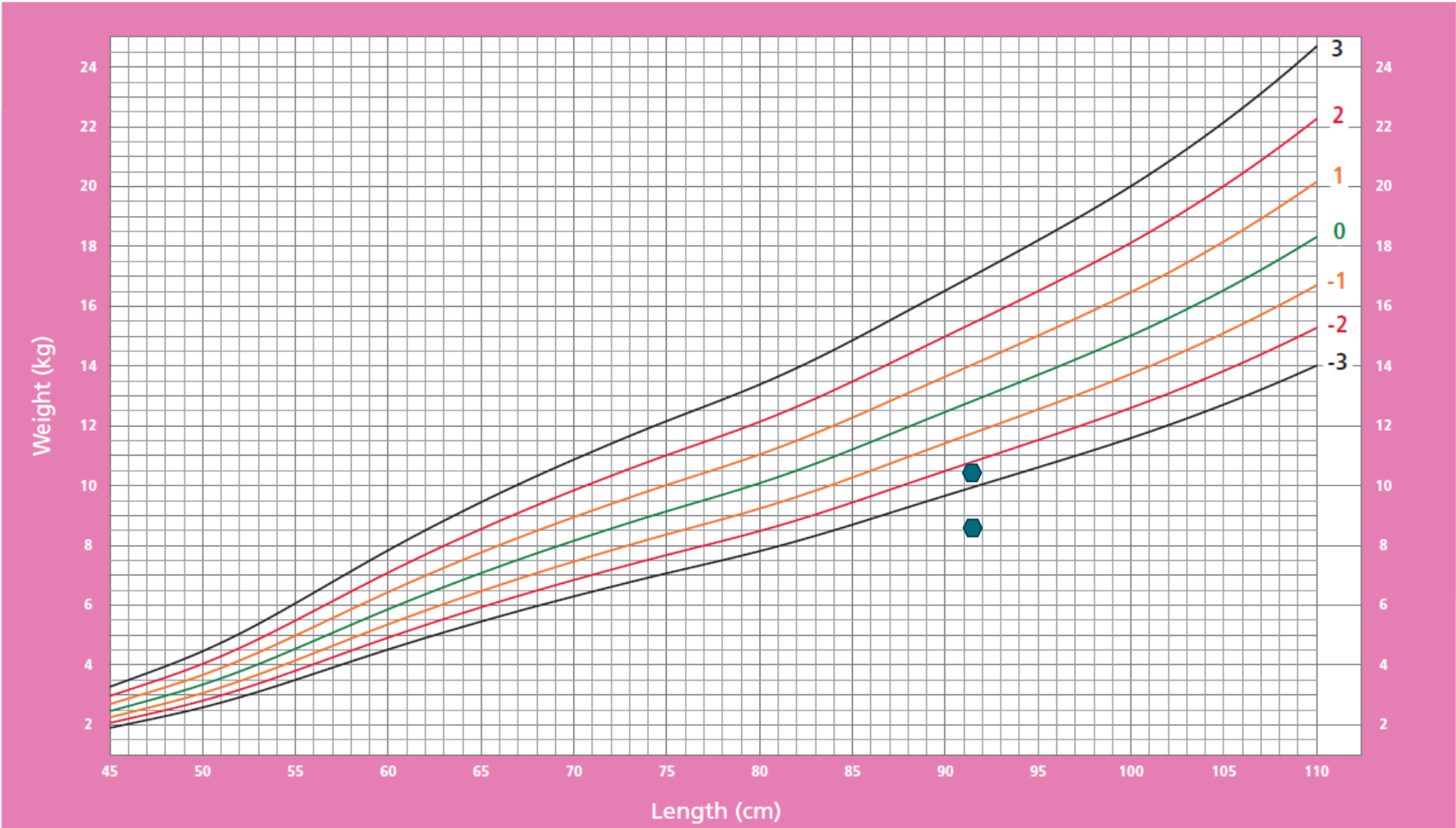


Measuring W/H



Weight-for-length GIRLS

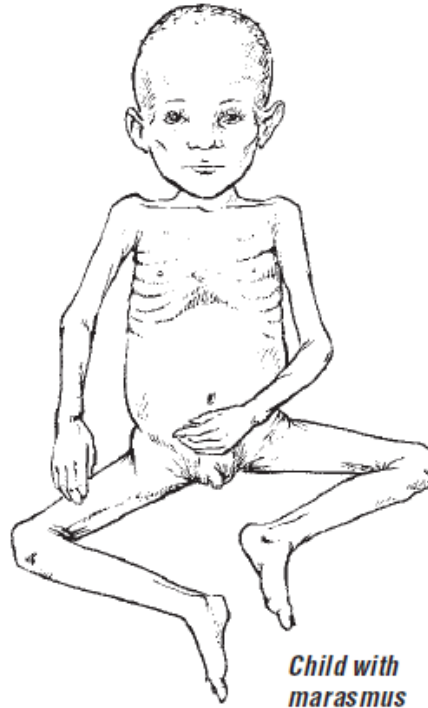
Birth to 2 years (z-scores)



Marasmus and Kwashiorkor

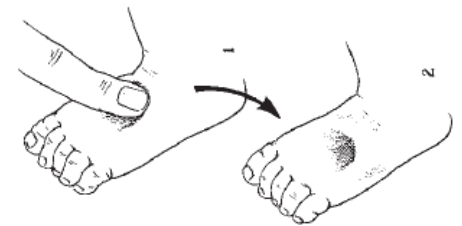
Marasmus

- Emaciation / wasting
- Apathy / Irritability
- Appetite Preserved



Kwashiorkor

- Edema
- Enlarged Liver and Spleen (Hepatosplenomegaly)
- Hair and Skin Changes
- Decreased Appetite



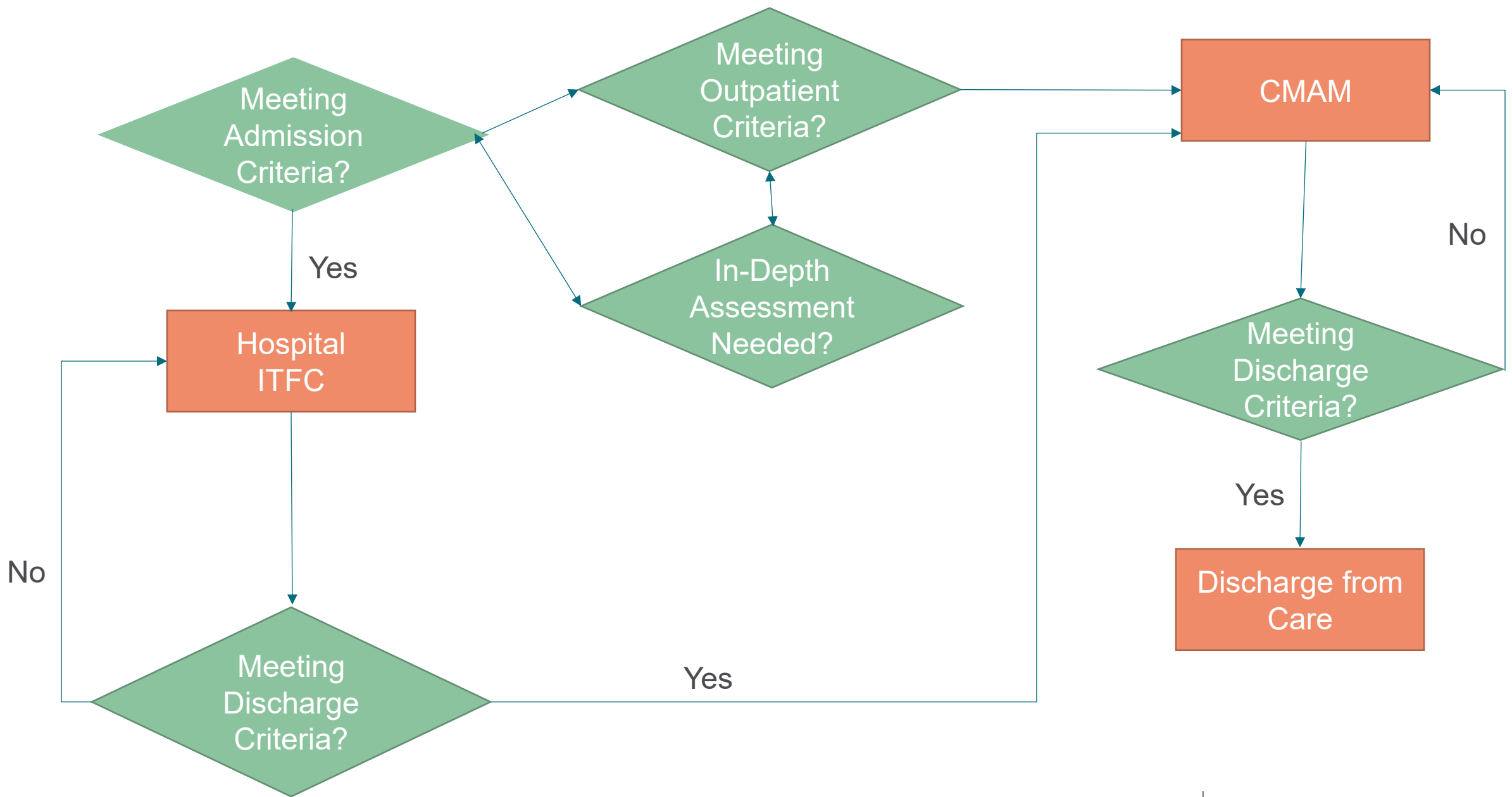
Pitting oedema on dorsum of foot. When pressure is applied for a few seconds, a pit remains after the finger is removed.

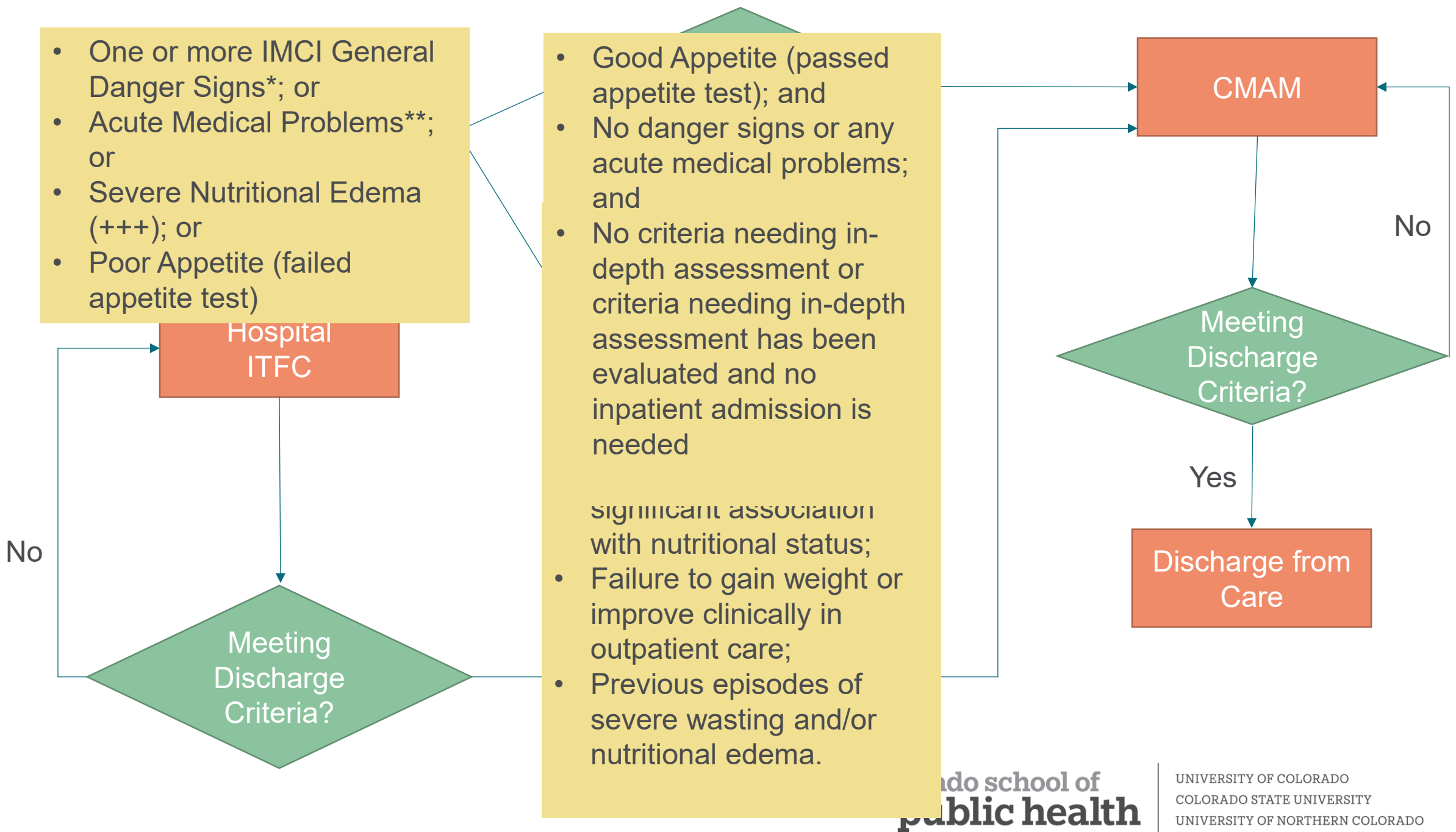


Treatment of Wasting and Nutritional Edema in children 6-59 months

Good Practice Statement

B1. Infants and children must be triaged as soon as they enter a health facility or have contact with a health worker in order to ensure that those with emergency or danger signs receive immediate life-saving care and that all others receive appropriate care as per their clinical status and classification. Identification of nutritional status is a vital aspect of this initial assessment in order to ensure that children with severe wasting and/or nutritional oedema receive prompt and appropriate interventions.





- No Danger Signs for at least 24-48 hours prior to transfer; and
- The medical problems that prompted admission have resolved to the point that inpatient care is no longer needed; and
- They do not have on-going weight loss (among children with severe wasting only who did not have nutritional edema at any time); and
- Nutritional edema is resolving and is no longer +++; and
- They have good appetite; and
- All attempts have been made to refer children with medical problems needing mid or long-term follow up and significant association with nutritional status to appropriate care/support services and/or the limits of inpatient care have been reached.
- Upon deciding to transfer patients from inpatient to outpatient care, caregivers must be linked to appropriate outpatient care with nutrition services.
- Additional social and family factors should be identified and addressed before transfer to outpatient care in order to ensure that the household has the capacity for care provision.

Meeting
Outpatient
Criteria?

In-Depth
Assessment
Needed?

Yes

CMAM

- WHZ or WLZ > -2 SD and MUAC > 125 mm for at least 2 consecutive visits/measurements; and
- There is no nutritional edema for at least 2 consecutive visits/measurements.
- Children with medical problems needing mid to long-term follow up and with a significant association with nutritional status and/or additional social factors have also been referred to appropriate care/support services and/or the limit of outpatient care has been reached for severe wasting / nutritional edema.

THEN CHECK FOR ACUTE MALNUTRITION

CHECK FOR ACUTE MALNUTRITION LOOK AND FEEL:

Look for signs of acute malnutrition

- Look for oedema of both feet
- Determine WFH/L* ____ z-score.
- Measure MUAC** ____ mm in a child 6 months or older

If WFH/L less than -3 z-scores or MUAC less than 115 mm, then:

- Check for any medical complication present:
 - Any general danger signs
 - 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

• Oedema of both feet OR • WFH/L less than -3 z-scores or MUAC less than 115 mm AND any one of the following: ○ Medical complication present or ○ Not able to finish RUTF or ○ Breastfeeding problem	Pink : COMPLICATED SEVERE ACUTE MALNUTRITION	➢ Give first dose appropriate antibiotic ➢ Treat the child to prevent low blood sugar ➢ Keep the child warm ➢ Refer URGENTLY to a hospital
• WFH/L less than -3 z-score OR • MUAC less than 115 mm AND • Able to finish RUTF	Yellow: UNCOMPLICATED SEVERE ACUTE MALNUTRITION	➢ Give oral antibiotics for 5 days ➢ Give ready-to-use therapeutic food 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 7 days
• WFH/L between -3 and -2 z-scores OR • MUAC 115 up to 125 mm	Yellow: MODERATE ACUTE MALNUTRITION	➢ Assess the child's feeding and counsel the mother on the feeding recommendations ➢ If feeding problem, follow up in 7 days ➢ Assess for possible TB infection ➢ Advise mother when to return immediately ➢ Follow up in 30 days
• WFH/L -2 z-scores or more OR • MUAC 125 mm 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 ➢ If feeding problem, follow up in 7 days.

*WFH/L is Weight-for-Height or Weight-for-Length determined by using the WHO growth standards charts.

** MUAC is Mid-Upper Arm Circumference measured using MUAC tape in all children 6 months or older.

***RUTF is Ready-to-Use Therapeutic Food for conducting the appetite test and feeding children with severe acute malnutrition.

Appetite Test

Minimum quantity the child must eat to pass the appetite test:

Child's weight (Kg)	Peanut paste (sachet of 92g)	Child's weight (Kg)	BP 100 (Bars)
Less than 4kg	1/8 to 1/4 of the sachet	Less than 5 kg	1/4 to 1/2
4 – 6.9 kg	1/4 to 1/3 of the sachet	5 – 9.9 kg	1/2 to 3/4
7 – 9.9 kg	1/3 to 1/2 of the sachet		
10 – 14.9 kg	1/2 to 3/4 of the sachet	10 – 14.9 kg	3/4 to 1
15 – 29 kg	3/4 to 1 sachet	15 – 29 kg	1 to 1 1/2
More than 30kg	> 1 sachet	Over 30 kg	> 1 1/2

Table 21. Time frame for the management of a child with complicated severe acute malnutrition

	Stabilization		Rehabilitation
	Days 1–2	Days 3–7	Weeks 2–6
1. Hypoglycaemia	→		
2. Hypothermia	→		
3. Dehydration	→		
4. Electrolytes	→		→
5. Infection	→	→	
6. Micronutrients	no iron →	→	with iron →
7. Initiate feeding	→	→	
8. Catch-up feeding			→
9. Sensory stimulation		→	→
10. Prepare for follow-up			→

Inpatient treatment

- Phase 1: Stabilization (3-7 days)
 - Stabilize and Treat Medical Conditions
 - Give parenteral antibiotics to treat possible sepsis and appropriate treatment for other medical complications such as TB, HIV, surgical conditions or disability;
 - Start re-feeding at 100 kcal/kg/day (130 mL/kg/day); Protein 1-1.5 mg/kg/day
 - Use Low osmolality, low lactose formula (F75)
- Phase 2: Transition (1-5 days)
 - Transition F75 to F100 or RUTF over 2-3 days
 - On 3rd day increase 10 mL of F100 per feed until some remains uneaten

Therapeutic Milk

F75

- 75 kcal energy, 0.9 g protein per 100 mL
- Used for stabilization
- Used for initial stage of recovery, not intended for weight gain
- 'starter feeding formula'
- On average used for 2-7 days
- SAM with medical complication

F100

- 100 kcal energy, 2.9 g protein per 100 mL
- Used for growth and recovery
- Used for rehabilitation phase for rapid weight gain after appetite has returned
- 'catch up' formula
- Used for longer duration
- SAM without complications

Outpatient Management

1. Weight Monitoring
2. Education - Nutrition and Hygiene
3. Education - Home –prepared Nutrient Dense Foods
4. Mental Health
5. Referral System
6. Provide Supplemental Food

Community Management of Severe Acute Malnutrition in Children 6 – 59 months

- Promote rapid weight gain and catch up growth
- 5 day course of a broad spectrum antibiotic such as amoxicillin
- Give RUTF in a quantity that provides 150-185 kcal/kg/day until anthropometric recovery or resolution of nutritional edema; or
- Give RUTF in a quantity that provides 150-185 kcal/kg/day until the child is no longer severely wasted and is having resolution of nutritional edema, then the quantity can be reduced to 100-130 kcal/kg/day until anthropometric recovery and resolution of nutritional edema



Good Practice Statement

B11. Infants and children aged 6–59 months of age with moderate wasting (defined as a weight-for-height between 2 and 3 z-scores below the WHO child growth standards median and/or a mid-upper arm circumference 115 mm or more and less than 125 mm, without oedema) should have access to a nutrient-dense diet to fully meet their extra needs for recovery of weight and height and for improved survival, health, and development.

B12. All infants and children 6-59 months of age with moderate wasting should be assessed comprehensively and treated wherever possible for medical and psychosocial problems leading to or exacerbating this episode of wasting.

B13. Prioritizing specially formulated food (SFF) interventions with counselling, compared to counselling alone, should be considered for infants and children 6-59 months of age with moderate wasting with any of the following factors.

Individual child factors:

- mid-upper arm circumference (MUAC) 115-119mm
- weight-for-age z-score (WAZ) <-3 SD
- age <24 months
- failing to recover from moderate wasting after receiving other interventions (e.g. counselling alone)
- having relapsed to moderate wasting
- history of severe wasting
- co-morbidity (medical problems needing mid or long-term follow-up care and with a significant association with nutritional status such as HIV and tuberculosis or a physical or mental disability)

Social factors:

- severe personal circumstances, such as mother died or poor maternal health and well-being.

B14. In high-risk contexts (where there is a recent or ongoing humanitarian crisis), all infants and children 6-59 months of age with moderate wasting should be considered for specially formulated foods (SFFs) along with counselling and the provision of home foods for them and their families.



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Supplementary Foods

Specially formulated foods (SFFs)

For the purpose of this guideline, specially formulated foods are defined as foods that have been specifically designed, manufactured, distributed, and used for either: special medical purposes or for special dietary uses, as defined by [Codex Alimentarius](#).

- **Ready-to-use supplementary food (RUSF)** [RUSF](#) is a fortified lipid-based paste/spread used for the supplementation of children with moderate wasting. It should not be used for the nutritional treatment of severe wasting and/or nutritional oedema.
- **Ready-to-use therapeutic food (RUTF)** RUTF is a food for special medical purposes ([Codex Alimentarius](#)), and includes pastes/spreads and compressed biscuits/bars used for the nutritional treatment of children with severe wasting and/or nutritional oedema.
- **Fortified Blended Foods (FBFs)** FBFs are blends of partially precooked and milled cereals, soya, beans, pulses fortified with micronutrients (vitamins and minerals). Special formulations may contain vegetable oil or milk powder and need to be cooked, sometimes with added sugar, oil and milk.

Conditional Recommendations

Moderate Wasting 6- 59 months of age

Specially formulated foods (SFFs)

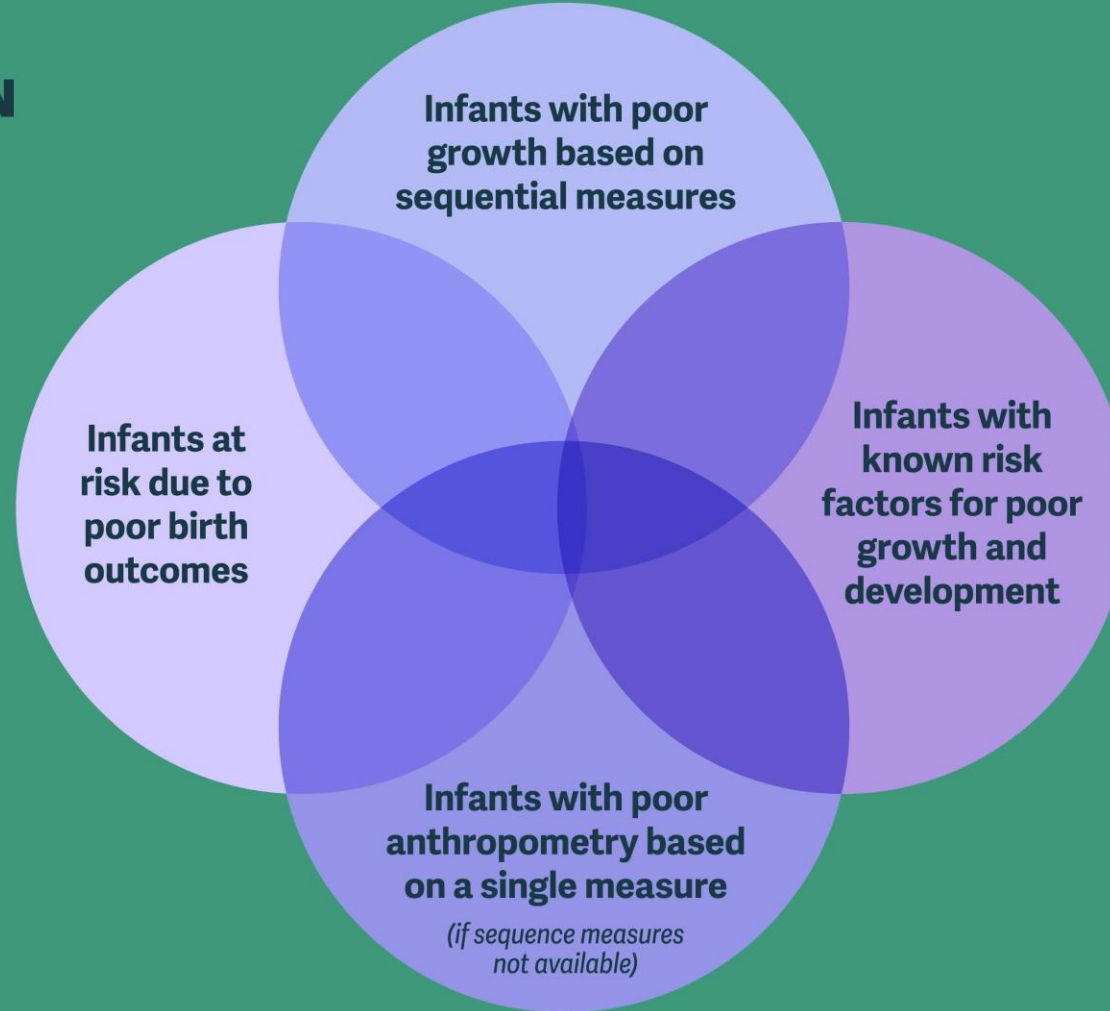
- 40-60% of the total daily energy requirements needed to achieve anthropometric recovery.
- Total daily energy requirements needed to achieve anthropometric recovery are estimated to be around 100-130 kcal/kg/day.

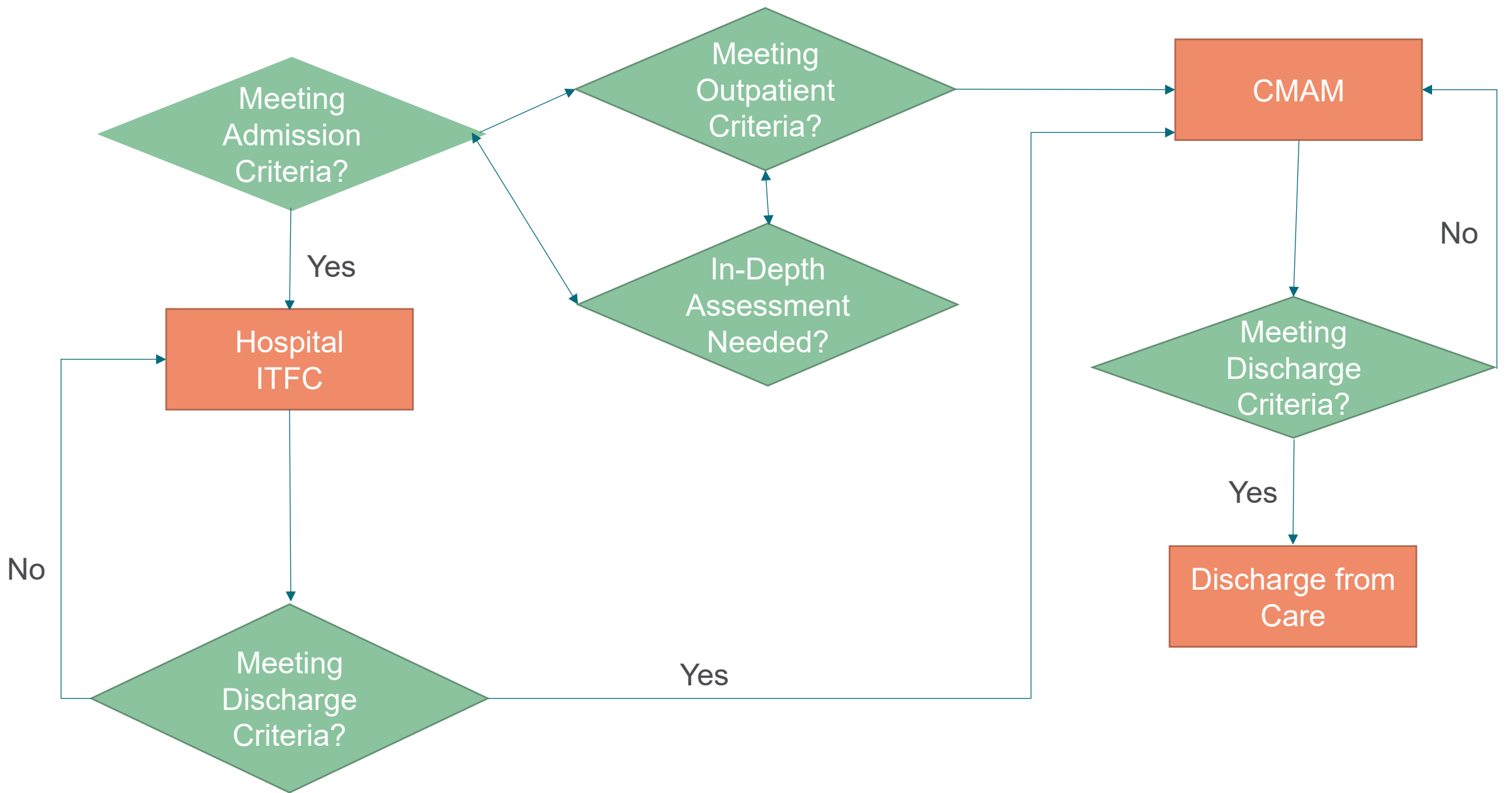
Treatment of Infants < 6 months at risk for poor growth and development

Good Practice Statement

A1. Mothers/caregivers and their infants less than 6 months of age at risk of poor growth and development should receive regular care and monitoring by health professionals. The immediate goal is the early detection of any acute medical or psychological problems and preventing infants from becoming severely underweight or severely wasted. The longer-term goal of this regular care and monitoring is to enable these infants to grow and develop in a healthy way that can lead to them achieving their full potential, whilst simultaneously supporting their mothers/caregivers with their own health and wellbeing. This approach recognizes the importance of acknowledging and caring for the mother/caregiver and infant as an inter-dependent pair for both to survive and thrive.

**INFANTS LESS THAN
6 MONTHS OF AGE
AT RISK OF POOR
GROWTH AND
DEVELOPMENT**





- i. One or more IMCI danger signs
- ii. Acute medical problems or conditions under severe classification as per IMCI
- iii. Oedema (nutritional)
- iv. Recent Weight Loss

Hospital
ITFC

Meeting
Discharge
Criteria?

No

No Danger Signs or any
criteria needing admission;
No criteria needing in-
depth assessment or
criteria are present but an

- Medical problems that do not need immediate inpatient care but do need in-depth assessment
- Medical problems needing mid or long term follow up care and have significant association with nutritional status
- Anthropometric criteria indicating risk for poor growth and development or failure to gain weight on 2 consecutive visits
- Ineffective breastmilk or perceived breast milk insufficiency
- Feeding concerns for non-breast fed infants
- Maternal related or social issue needing more detailed assessment or intensive support.

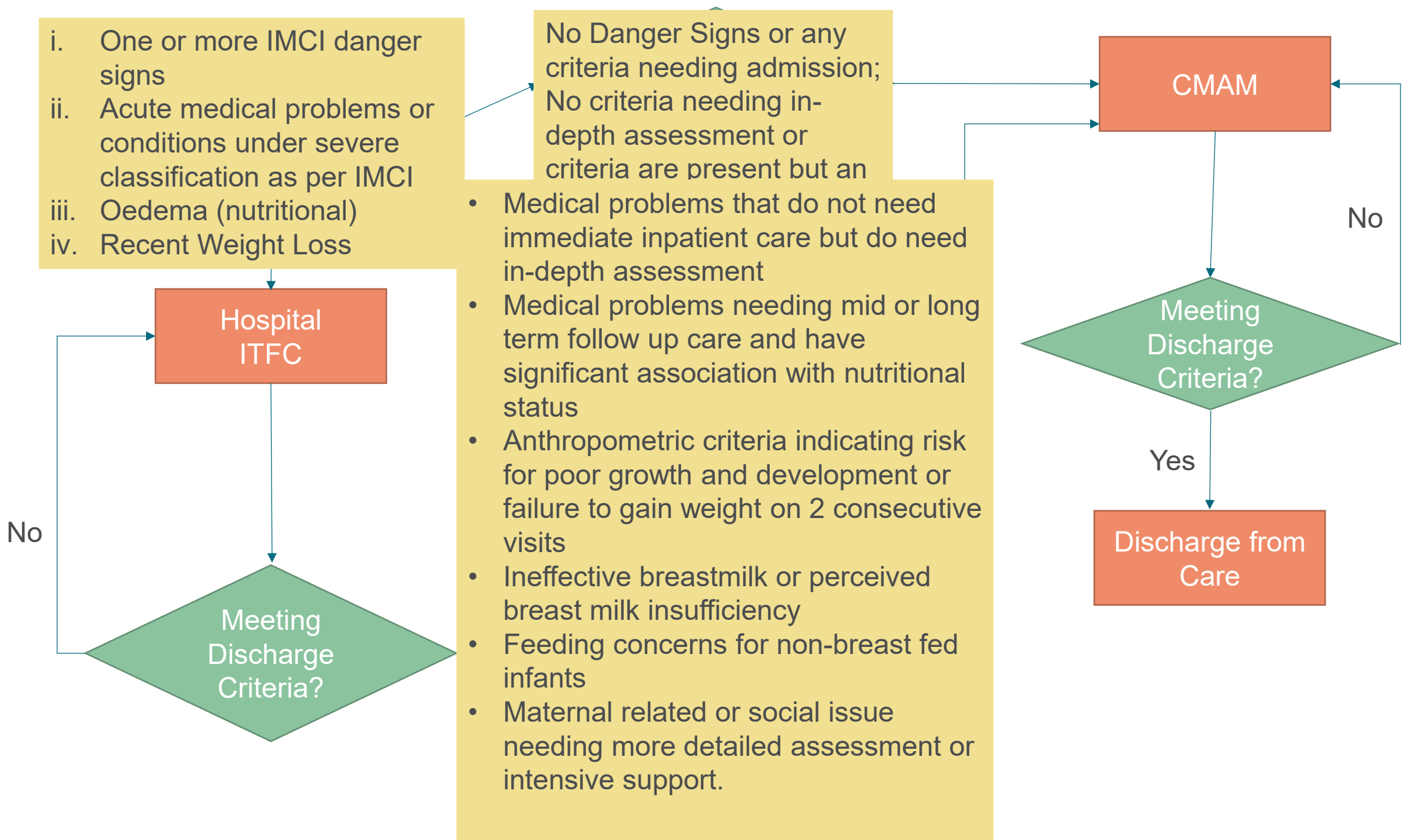
CMAM

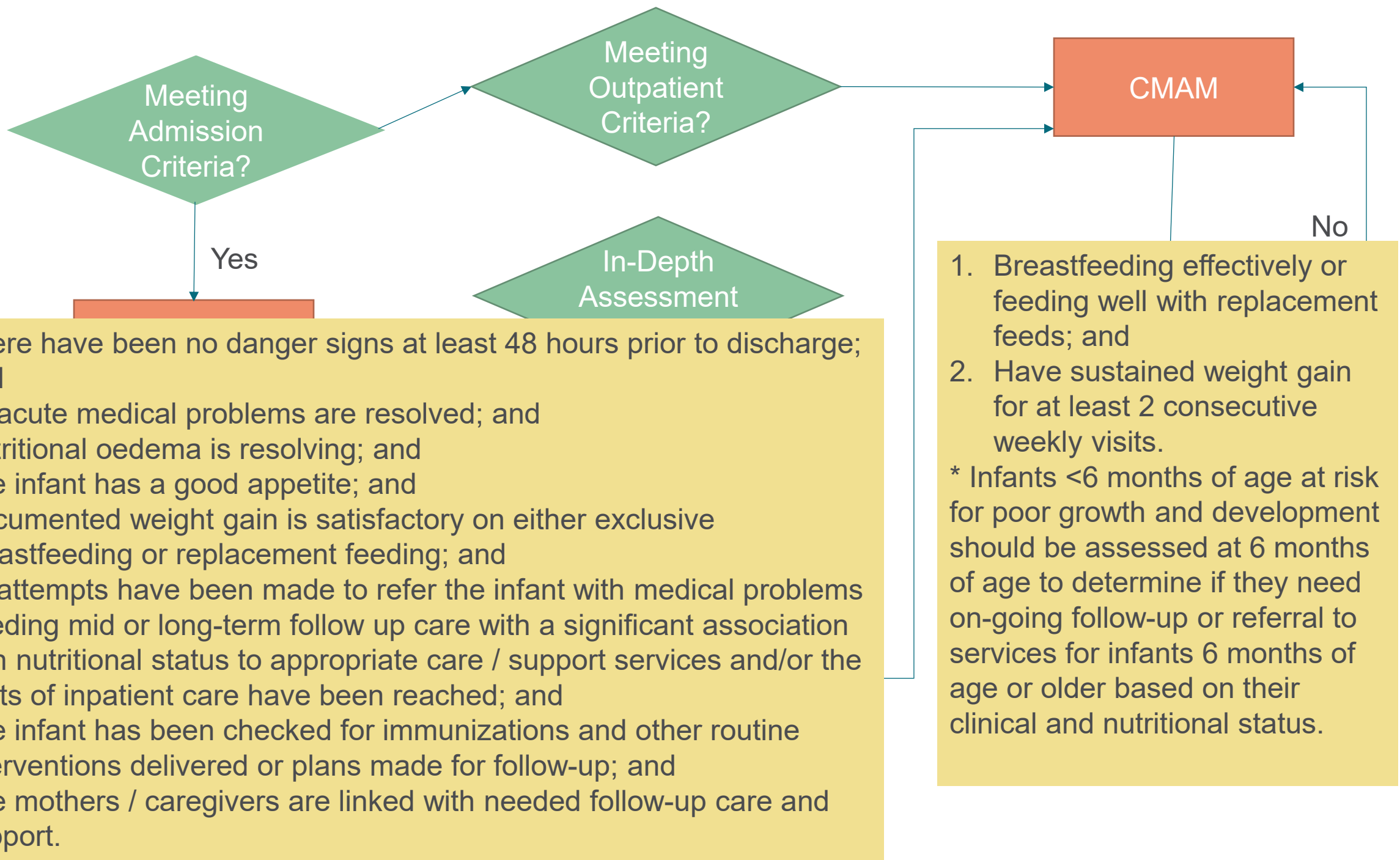
Meeting
Discharge
Criteria?

Yes

Discharge from
Care

No





Good Practice Statement

A5. For infants less than 6 months of age at risk of poor growth and development, health care providers should conduct comprehensive assessments of the mother/caregiver-infant pair and follow best practices for the management of breastfeeding/lactation challenges and underlying factors contributing to these challenges.

A6. Decisions about whether an infant less than 6 months of age at risk of poor growth and development needs a supplementary milk in addition to breastfeeding must be based on a comprehensive assessment of the medical and nutritional/feeding needs of the infant, as well as the physical and mental health of the mother/caregiver. This applies to infants who are enrolled in outpatient care or admitted into inpatient care.

Infants who are less than 6 months of age with severe wasting and/or nutritional oedema should receive the same general medical care as infants with severe wasting and/or nutritional oedema who are 6 months of age or older

Inpatient treatment of severe wasting and nutritional edema in infants < 6 mos

- Parenteral antibiotics and treatment of any other medical conditions
- Prioritize establishing or re-establishing effective breastfeeding
 - If infant not breast fed mother / caregiver should be encouraged to re-lactate
 - Encourage wet-nursing
- Supplementary feeding of infants without edema with EBM, infant formula, F-75 or diluted F-100.
 - There is insufficient evidence to recommend switching infants who are not tolerating F-75 or F-100 to hydrolyzed formulas
- Supplementary feeding of infants with edema give infant formula or F-75 in addition to breast milk.
 - Infants who are clinically unstable or have nutritional edema, diarrhea, or dehydration should NOT be given full strength F-100 due to renal solute load and risk of hyponatremic dehydration.
- If no realistic prospect of breast feeding give adequate replacement (infant formula), and relevant support for safe preparation and use after discharge.
- Assessment of the physical and mental health status of mothers or caregivers should be promoted and relevant treatment or support provided.

Community Management of Infants < 6 months at risk for poor growth and development

- Administer broad spectrum oral antibiotic such as amoxicillin
 - Only infants with severe wasting and/or nutritional edema
- Prioritize establishing or re-establishing effective breastfeeding
 - If infant not breast fed mother / caregiver should be encouraged to re-lactate
 - Encourage wet-nursing
- Supplementary feeding of infants with EBM, infant formula, F-75 or diluted F-100.
- Provide counseling and support for optimal infant and young child feeding.
- Weekly weight monitoring
- Assessment and support of medical and mental health of caregivers
- Refer to inpatient care if infant does not gain or loses weight while the caregiver is receiving breastfeeding support

Other therapies

- Vitamin A 
 - High Dose should be given to children with SAM and eye findings of Vitamin A deficiency, recent measles infection, or who are not receiving adequate (5000 IU) daily as part of therapeutic foods or multi-micronutrient supplementation.
- Iron
 - Give 3 mg/kg/day x 3 months of elemental iron once children have been on F-100 x 2 days. Do NOT give during the stabilization phase of treatment or if the child is receiving RUTF.
- Zinc
 - 10-20 mg/day in children with SAM and diarrhea (already included in therapeutic foods)
- Treatment for intestinal worms
 - If there is evidence of infestation delay treatment until the rehabilitation phase.
 - Give a single dose of Albendazole or Mebendazole 100 mg twice daily x 3 days.
 - If in an area where infestation is prevalent, give Mebendazole to all children after 7 days of treatment.

Other therapies

- Vitamin A 
 - High Dose should be given to children with measles infection, or who are not receiving multi-micronutrient supplementation.
- Iron
 - Give 3 mg/kg/day x 3 months of elemental iron. Do NOT give during the stabilization phase of treatment.
- Zinc
 - 10-20 mg/day in children with SAM and diarrhea (already include therapeutic foods)
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 - If there is evidence of infestation delay treatment until the rehabilitation phase.
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 - If in an area where infestation is prevalent, give Mebendazole to all children after 7 days of treatment.

High dose Vitamin A given on day 1, 2 and 14 of treatment

- < 6 mos 50,000 IU;
- 6-12 mos 100,000 IU;
- 12+ mos 200,000 IU

Eye Findings of Vitamin A Deficiency



Xerophthalmia



Bitot's Spot



Corneal Ulceration

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