

## CHAPTER 8:

# NUTRITION IN EMERGENCY

## 8.1 Introduction of the Unit of Learning / Unit of Competency

This unit specifies the competencies required to apply nutrition in emergency. It involves conducting rapid assessment on the nutrition situation, selecting food and nutrition emergency responses and plan, providing nutrition and health interventions and monitoring implementation of interventions

## 8.2 Performance Standard

By the end of this unit of learning/competency, the trainee should demonstrate ability to carry out rapid assessment commensurable with workplace procedures; select food and nutrition emergency response as per WHO guidelines and nutrition situation; provide nutrition and health interventions during emergency situations based on patient's nutritional needs and workplace procedures and monitor implementation/outcomes of intervention through re-assessments in line with client's requirements.

## 8.3 Learning Outcomes

### 8.3.1 List of Learning Outcomes

1. Conduct rapid assessment on the nutrition situation
2. Select food and nutrition emergency responses and plan
3. Provide nutrition and health interventions
4. Monitor implementation of interventions
5. Document nutritional intervention during emergencies

### 8.3.2 Learning Outcome 1: Conduct rapid assessment on the nutrition situation

#### 8.3.2.1 Learning Activities

Learning activity.	Special instructions.
<ol style="list-style-type: none"><li>1. Carry out anthropometric assessment<ul style="list-style-type: none"><li>• Mid upper arm circumference (MUAC)</li><li>• Height/length</li><li>• Weight</li></ul></li></ol>	<ul style="list-style-type: none"><li>• Identify the appropriate materials/equipment</li><li>• Assess MUAC</li><li>• Take weight and measure length/height</li></ul>

2. Carry out physical and clinical assessment	<ul style="list-style-type: none"> <li>• Observe clinical features</li> <li>• Document observations</li> </ul>
3. Document nutrition condition	<ul style="list-style-type: none"> <li>• Determine the number of people affected by an emergency</li> <li>• Describe how well the affected population is coping</li> <li>• Triangulate collected information</li> <li>• Record outcomes</li> <li>• Maintain documents</li> </ul>

### 8.3.2.2 Information Sheet

#### Definitions

- **Nutritional assessment**; the process followed when determining an individual's nutritional status; through collecting and analysing anthropometric, biochemical, clinical and dietary data
- **Rapid assessment and response** is a way of making a comprehensive assessment of a specific public health issue
- **Emergency**: They are unusual events that occur and are not part of normal life.
- **Nutrition in emergency**: the process of providing or obtaining the food necessary for health and growth of the vulnerable groups of people e.g. refugees, people affected by natural calamities
- **Complex emergency** is an internal crisis in the state where the capacity to sustain livelihood and life is threatened by primarily political factors and, in particular, high levels of violence
- **Mid upper arm circumference (MUAC)**: the circumference of the left upper arm measured at the midpoint between the tip of the shoulder and the elbow tip.
- **Body mass index (BMI)**: a person's weight in kilograms (kg) divided by his or her height in meters squared. Used to compare a person's weight and their height.
- **Client** : any individual child/adult who is under any form of management for malnutrition
- **Disaster**: a serious disruption of the functioning of a society causing widespread human material or environmental losses which exceeds the ability of the affected society to cope with its own resources

#### Types of Disasters

- **Natural disasters**: They are normally of sudden impact or slow onset. The sudden ones occur due to natural causes like earth quake, tropical storm, floods, and volcanic eruptions. The slow onsets are like drought, famine, pest infection, deforestation. Epidemic diseases e.g. waterborne vector borne diseases like Cholera.

- **Man-made disasters:** mainly occurs due to human errors and sometimes are of industrial origin e.g. fires, pollution, explosion and spillages.
- **Complex emergencies :** this includes wars, civil strike and armed aggression due to political issues or condition

## **Introduction**

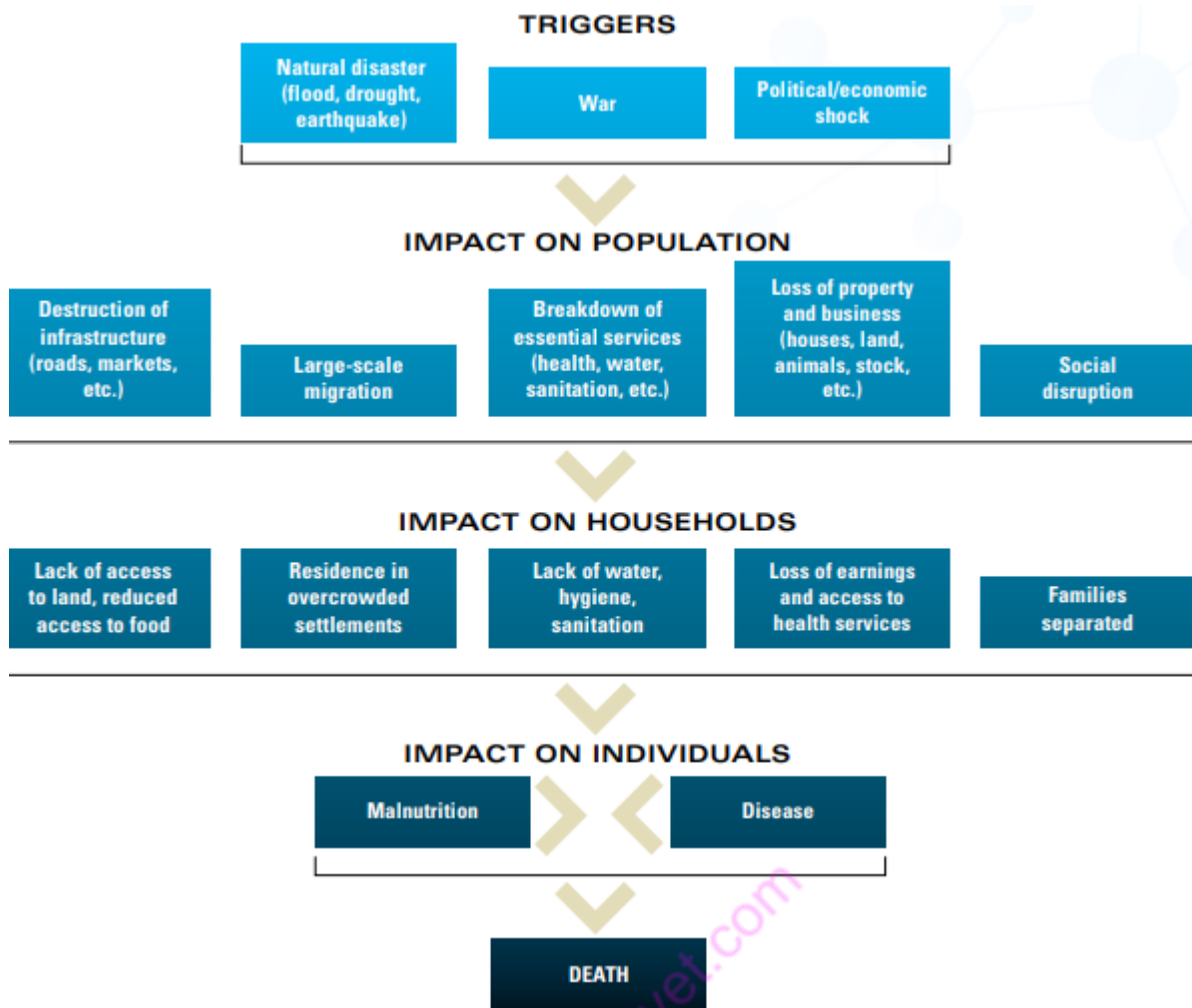
Disasters disrupt normal life for communities and individuals. This includes food access and feeding behaviour and so affects their nutritional status. This situation puts many people at risk of malnutrition. In some instances where populations depended on food assistance, it is imperative to provide an adequate food ration so as to meet the minimum energy, protein and fat requirements for survival and light physical activity among the population. This is because multiple forms of malnutrition such as: wasting, severe stunting, micronutrient deficiencies, obesity are usually reported in the context of crisis. Nutrition care in emergency becomes necessary in such circumstances to treat malnutrition and prevent those at risk from suffering from malnutrition.

## **Triggers of Nutrition emergencies**

- Political instability & crises
- HIV & AIDs
- Poverty and urban pressure of marginalised populations
- Natural disasters emanating from unpredictable climate changes e.g. drought, flooding, storms, global warming and insect infestation
- Existing health and nutrition situation
- Conflict situations
- Global food prices fluctuations
- Severe shortages of food combined with disease epidemics.
- Poor infrastructure
- Chronic food insecurity
- Economic shocks

## **Impact of Nutrition emergencies on nutrition status**

Emergencies have an impact on a range of factors that can increase the risk of malnutrition, illness (morbidity) and death (mortality) (see Figure). Emergencies can be a critical moment, revealing and exacerbating underlying pre-existing nutrition concerns. If a population has a quite good nutritional status just before an emergency, it is important to protect this through suitable responses as it can worsen during the emergency. Populations that have a poor nutritional status at the onset of an emergency are usually more vulnerable to widespread nutritional crises as a result of an emergency



### *Impact of an emergency on Nutrition Status*

#### **Vulnerable groups in nutrition emergencies**

The most vulnerable people within a population include young children, the old, chronically ill, disabled, pregnant and lactating women.

Different population groups usually experiences different categories of nutritional vulnerability according to their;

- **Physiological vulnerability:** caused by;
  - o High nutrient requirement among vulnerable groups
  - o Reduced appetite and ability to feed e.g. geriatrics, people living with disability, chronically ill
  - o **Children- under five years** children are vulnerable as their nutrient requirements are high to support growth and development.
  - o **Low birth weight babies-** their requirements are high for catch up growth.
  - o **0-24-month-old children-** their growth rate is high thus they require a lot of nutrients for both growth and development
  - o **Lactating and pregnant mothers** are physiologically compromised with high nutritional requirements and the work output to generate food is low.

- o **Elderly, disabled and people with chronic illness** have low productivity and the condition calls for dependency on other people services including getting food and even consuming it. In some cases resources are diverted to medical bills.
- **Geographical vulnerability**- people living in areas where they are exposed to food and nutrition insecurity e.g. populations living in drought or flood or conflict prone areas
- **Political vulnerability**- This vulnerability occurs due to political related instabilities for example the post-election violence. In most case these lead to displaced populations' and refugee status e.g. people who are oppressed
- Internal displacement and refugee status
- Socio-economic vulnerability: those who limited source of livelihoods e.g. the por. In emergencies the poorest households are mostly vulnerable

## Emergency needs assessment

### *Rapid assessment during nutrition emergency*

In any emergency response the first step is usually to assess the extent and impact of the damage caused by the disaster and the capacity of the affected population to meet its immediate survival needs.

Local assessment includes assessment of household livelihoods, food security, safe drinking water supply, sanitation, health care and child feeding practices, the latter as part of a nutrition survey if data are unavailable

Local food and nutrition assessment plays the following role:

- To determine the existence of an emergency food and nutrition problem, including the cause(s) and the magnitude of the emergency
- To offer recommendations for a course of action to reduce or prevent a food and nutrition emergency by considering the available data and field observations;
- To communicate this information to the concerned decision makers and government authorities, both local and national;
- To assess local capacity and the capacity of other organisations such as Non-Governmental Organizations (NGOs) and UN agencies to respond.

The survey report should present the acute malnutrition rate, the severe acute malnutrition rate and the prevalence of kwashiorkor in order to discuss the real situation about household food security, public health, child feeding practices and humanitarian assistance based on the information collected during the local field assessment. The findings should be communicated as soon as possible to both local and national authorities.

Assessments can take the following forms:

- i) *Rapid assessment*: carried out immediately after a disaster in order to provides information on needs, possible courses of action and resource requirements. It normally takes up to a week.
- ii) *Detailed assessment*: carried out after a rapid assessment and is a more detailed assessment. It checks if the situation is changing and to find out if more information is needed. It takes about one month, depending on the size of the area and the complexity of the situation.

- iii) *Continual assessment*: Emergency situations can evolve rapidly and include unexpected knock-on effects, such as population movements. Assessment should therefore be an ongoing process throughout the emergency phase.

**Rapid assessment during nutrition emergency**

- Rapid assessment involves focusing on the characteristics of the health problem, the population groups affected, key settings and contexts, health and risk behaviour and social consequences. Through rapid assessment, existing resources and opportunities for intervention are identified which helps in planning, developing and implementing interventions and programmes as a result. This method is used when information is needed urgently. It is helpful when there is limited accessibility to populations and assessments need to be urgent.

**Type of data to collect during rapid assessment**

- The type of information to be collected should be related to (Table below):
- Access and security – How are the communication networks of the area? How safe the area is from secondary disasters e.g. fires, chemical spills etc.
- Population affected – Number of affected, gender ratio, age, vulnerable groups, total population, displaced etc.
- Community resources – Infrastructure affected (Hospitals, Schools, drainage system, skilled persons availability, Disaster plans, evacuation plans/centers available/how much effective, Early warning system available/affected, means of communication etc.
- Health – Medical facilities, health infrastructure, diseases, pregnant women/child health
- Water – Sanitation system, water storage facilities, water testing & distribution systems,
- Food and non-food items – Food supply available, cooking facility, equipment, fuel etc.
- Shelters – how much required, capacity in the area? How fast can it become available?

**Rapid assessment checklist**

<p>1. Security and access</p> <ul style="list-style-type: none"> <li>• Route(s) to the location</li> <li>• Damage severity</li> <li>• Road accessibility, building collapse</li> <li>• Secondary disaster; chemical disaster. Fire</li> <li>• Pipeline damage: gas, water, sewage</li> <li>• Ongoing safety and security concerns</li> <li>• Weather conditions</li> <li>• Phone/internet connectivity</li> </ul>	<p>8. Water</p> <ul style="list-style-type: none"> <li>• Water sources</li> <li>• Water distribution system</li> <li>• Water storage</li> <li>• Distance from homes to water source</li> <li>• Water testing system</li> </ul>
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<p>2. Population affected</p> <ul style="list-style-type: none"> <li>• Population before disaster</li> <li>• Number of population displaced</li> <li>• Estimated sex ratio</li> <li>• Vulnerable groups with special needs <ul style="list-style-type: none"> <li>• Dialysis patients, oxygen-dependent patients, immobile elderly, unaccompanied minors, pregnant women, etc.</li> </ul> </li> </ul>	<p>9. Sanitation</p> <ul style="list-style-type: none"> <li>• Toilet facilities <ul style="list-style-type: none"> <li>• Types</li> <li>• Numbers</li> <li>• Location (distance from shelter/housing)</li> <li>• Lights, locks</li> <li>• Maintenance</li> <li>• Menstrual hygiene material</li> </ul> </li> <li>• Sanitation <ul style="list-style-type: none"> <li>• Lavatories, buckets, warm water, shower</li> <li>• Privacy in bathing/washing spaces</li> </ul> </li> </ul>
<p>3. Community resources</p> <ul style="list-style-type: none"> <li>• Community disaster infrastructure <ul style="list-style-type: none"> <li>• Emergency warning system</li> <li>• Community disasters plan and drills</li> <li>• Pre-designated shelters</li> </ul> </li> <li>• Means of transportation</li> <li>• Means of communication <ul style="list-style-type: none"> <li>• Mobile phones, landlines, internet, television, radio</li> </ul> </li> </ul>	<p>10. Food and Non-food items</p> <ul style="list-style-type: none"> <li>• Food supply and calories intake</li> <li>• Cooking (self-preparation, communal kitchen)</li> <li>• Food sources, staples, and food storage methods</li> <li>• Essential items for daily living <ul style="list-style-type: none"> <li>• Electricity, gas and gasoline supplies</li> <li>• Water containers, blankets, bedding/mattresses, soaps, cooking tools and equipment (e.g. utensils, stoves, etc.), lighting, heating/air-conditioning equipment.</li> </ul> </li> </ul>
<p>4. (to 7) Mortality and health Impact</p> <ul style="list-style-type: none"> <li>• Mortality (crude mortality rate, under 5 mortality rate)</li> <li>• Main diseases and morbidity</li> <li>• Damage and impact to medical facilities, staff, and supplies</li> <li>• Public health infrastructure (surveillance, immunization)</li> <li>• Child health</li> <li>• Damage to emergency medical services</li> <li>• Reproductive health (emergency obstetric care, prevention of sexual violence).</li> </ul>	<p>11. Shelter (including temporary housing)</p> <ul style="list-style-type: none"> <li>• Status and need for temporary shelters</li> <li>• Number of shelters and each capacity</li> <li>• Covered area</li> <li>• Availability of partitions (family-based or for different sex).</li> </ul>

## **Sources and Methods of Data collection**

- Reports from first responders, relief workers, media and government announcements
- Existing official records, national census and maps
- The affected population
- Other relief teams
- Key informant interviews e.g. Officials at the local city hall, community leaders, public health centres, providers at hospitals, and other responders
- Methods include aerial survey of the affected area, direct observations

In the process, the assessor should focus on the following 5 key points.

1. Assessment of the general layout of the affected area
2. Estimation of the number of affected people and local infrastructures and resource
3. Living conditions, water supply, sanitation, food supply, health and healthcare services, as well as level of insecurity
4. The extent to which “normal life” and social structure have been disrupted
5. How well the affected population is coping

## **Shortcoming of rapid assessment**

- Speed is more prioritized than data accuracy hence high chances of data compromise
- Biasness in the information obtained: Not in depth, for complete information detailed study must be done.
- Difficulties in assessing some areas due to insecurity and inaccessibility issues
- Dilemma of whether to continue with assessment or attend to people with need of assistance.

## **Things to Consider Before Conducting a Rapid Assessment**

- Assessment team to comprise of disaster experts, staff familiar with the local area, and relevant specialists such as public health, epidemiology, logistics, etc.), who fully understand the sphere standards
- Decision on comprehensive assignment of each team
- Plan to complete the survey within a maximum of three (3) days
- Information on local
- Information about local health concerns, security, safety, and communication infrastructure is very vital for logistics



- Materials for rapid assessment need to be gathered beforehand (food, water, fuel, tent/ sleeping bags, climate appropriate clothing, compass, maps, list of contacts, camera, flashlight, backpack, batteries, chargers/adapters, communication devices, data entry supplies such a calculator, pens, paper, iphone etc)

### 8.3.2.3 *Self-Assessment*

1. Explain the types of nutrition assessment conducted in emergencies
2. List five causes of emergencies
3. Outline the aims of nutrition in emergencies
4. Explain the factors that influence nutrition in emergencies
5. \_\_\_\_\_ a serious disruption of the functioning of a society causing widespread human material or environmental losses which exceeds the ability of the affected society to cope with its own resources
  - A. Emergency
  - B. Disaster
  - C. Nutrition Problem
  - D. Crisis
6. Which one of the following is a man-made disaster?
  - A. Earth Quake
  - B. Floods
  - C. Pollution
  - D. Volcanic Eruptions
7. Which one of the following is a type of geographical vulnerability?
  - A. Low birth weight babies
  - B. The oppressed
  - C. Populations living in drought or flood or conflict prone areas
  - D. The poor
8. Which of the following is not a type of physiological vulnerability?
  - A. Children- under five years
  - B. Low birth weight babies
  - C. Poor people
  - D. Lactating and pregnant mothers

9. Which one of the following is NOT a trigger of nutrition emergencies
- A. Political instability & crises
  - B. War
  - C. Poverty
  - D. Natural disasters

#### **8.3.2.4 Tools, equipment, materials and supplies**

- Nutrition guidelines
- Rapid assessment checklist
- Rapid assessment form
- WHO guidelines
- MOH
- Ministry of Education
- Skills lab
- Use of LCDs, video clips, charts and other teaching aids
- Invitation of competent expertise
- Computers with internet
- Library and resource centre

#### **8.3.2.5 References**

Som Nath Singh. Nutrition in emergencies: Issues involved in ensuring proper nutrition in post-chemical, biological, radiological, and nuclear disaster. *J Pharm Bioallied Sci.* 2010 Jul-Sep; 2(3): 248–252

[https://fcluster.org/sites/default/files/documents/chapter\\_9\\_food\\_and\\_nutrition.pdf](https://fcluster.org/sites/default/files/documents/chapter_9_food_and_nutrition.pdf)

[https://www.who.int/hiv/pub/prev\\_care/en/youngpeoplerar.pdf?ua=1](https://www.who.int/hiv/pub/prev_care/en/youngpeoplerar.pdf?ua=1)

A Toolkit for Addressing Nutrition in Emergency Situations, IASC June 2008.

<https://www.slideshare.net/DrSUHASINIKANYADI/nutritional-emergencies-2015>

[https://www.slideshare.net/razifshahril/5-nutrition-in-emergencies?from\\_action=save](https://www.slideshare.net/razifshahril/5-nutrition-in-emergencies?from_action=save)

The management of nutrition in major emergencies – WHO

Food security and nutrition in emergency – John Hopkins and International Federation of Red Cross

<https://www.ifrc.org/en/what-we-do/disaster-management/responding/disaster-response-system/emergency-needs-assessment/> Emergency needs assessment accessed on 6<sup>th</sup> October 2019

Lee, R., & Nieman, D. (2012). *Nutritional Assessment: Sixth Edition* (6th ed., pp. 166-365). New York, NY: McGraw-Hill Higher Education.

DE VILLE, D. G., Seaman, J., & Geijer, U. (1978). The management of nutritional emergencies in large populations. World Health Organization, Geneva.

World Health Organization. (2000). *The management of nutrition in major emergencies*. World Health Organization.

<http://www.mnestudies.com/disaster-management/rapid-needs-assessment>. Rapid needs assessment- Retrieved on 5th October 2019.

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### 8.3.3 Learning Outcome 2: **Select food and nutrition emergency responses and plan**

#### 8.3.3.1 Learning Activities

Learning activity.	Special instructions.
1. Determine nutrition status as per client history <ul style="list-style-type: none"> <li>Review anthropometric assessment</li> </ul>	<ul style="list-style-type: none"> <li>➤ Interpret nutritional assessment data</li> <li>➤ Identify individuals at risk of malnutrition</li> <li>➤ Use standard methods to conduct a population survey to assess acute and severe malnutrition</li> <li>➤ select appropriate indicators</li> <li>➤ utilize the appropriate reference standards when comparing measurements</li> <li>➤ Document findings</li> </ul>
2. Design therapeutic feeding program <ul style="list-style-type: none"> <li>Review types of feeding programmes</li> </ul>	<ul style="list-style-type: none"> <li>➤ Calculate the energy requirements of the population</li> <li>➤ identify commodities that meet the energy, protein, fat and micronutrients of the target population</li> <li>➤ Create a partnership with stakeholders</li> <li>➤ Choose appropriate feeding programme</li> <li>➤ Plan the therapeutic feeding programme</li> </ul>
3. Determine health status of clients <ul style="list-style-type: none"> <li>Identify the extent of client condition</li> </ul>	<ul style="list-style-type: none"> <li>➤ Categorise client on health status</li> <li>➤ Identify the most vulnerable groups</li> </ul>

#### 8.3.2.2 Information Sheet

The following factors should be considered when planning nutrition care in emergency:

- **Environmental temperature:** The environmental conditions of a place influences energy expenditure. Living in a cold environment increases energy expenditure. This should be an important consideration when planning nutrition care .
- **Demographic characteristics:** This factor considers population characteristics and composition, which influences the average energy requirement of a population.
- **Health and nutritional status:** Presence of disease in a population during emergencies increases nutritional requirements. Some diseases may increase nutritional requirements through reduced food intake, increased nutrient loss via vomiting and diarrhea, and catabolism.
- **Physical activity level:** Physical activity level determines nutritional requirement. Individuals and communities who lead a sedentary lifestyle need less energy compared to those who are active. Activity level for communities may be determined by socio-economic activities practiced by community members.

### **Aim of nutrition in emergency**

- To reduce malnutrition mortalities
- To improve nutritional status of the affected people
- To prevent their situation from deteriorating.

### **The scale of emergency nutrition**

The objectives of nutrition action in emergencies typically include;

- a) Reduction of wasting levels to below conventionally defined emergency rates of thresholds
- b) Reduction and/or prevention of micronutrient deficiencies, because these clearly increase mortality risks
- c) Reduction of the specific vulnerability of infants and young children in crises through the promotion of appropriate child care, with special emphasis on infant and young child feeding practices
- d) Prevention of a life-threatening deterioration of nutritional status by ensuring access by emergency affected populations to adequate, safe and nutritious foods that meet minimum nutrient needs

### ***Stages of a food and nutrition emergency***

Potential cause of a food and nutrition emergency (drought, flood, armed conflict, economic shock, population displacement, poverty); early warning indicators



Field assessment of affected population(s); information indicates a food emergency exists



Procurement and distribution of general food ration to the affected population; food security situation stabilizes



Nutrition monitoring of the affected population



Potential increase in acute malnutrition; implementation of micronutrient supplementation and supplementary and therapeutic feeding as needed



Nutrition monitoring of the affected population



Food security situation improves and stabilizes for decrease in acute malnutrition

## Planning a ration

Once the initial planning figure of 210 kcal/person/day is adopted, adjustments should be made based on factors such as temperature, health or nutritional status of the population, distribution of the population and activity levels. The following steps are followed;

1. Calculation of the energy requirements of the population.
2. Selection of commodities that meet the population's nutrient requirements based on the recommended actions for various nutrition situations (See Table below)
3. Implementation of monitoring and follow up actions, collection of data and analysis of data.
4. Assessment of the ability of the population to access other food sources and adjust the ration (where applicable).
5. Monitor the situation following any such adjustments.

### *Recommended actions for various nutrition situations*

Nutrition situation (prevalence)	Recommended actions
Acute malnutrition rate >15% or 10-14% with aggravating factors	<ul style="list-style-type: none"><li>• Emergency food aid: general food ration</li><li>• Blanket supplementary feeding</li><li>• Therapeutic feeding of severely malnourished individuals</li></ul>
Acute malnutrition rate 10-14% or 5-9% with aggravating factors	<ul style="list-style-type: none"><li>• No general rations</li><li>• Targeted supplementary feeding</li><li>• Therapeutic feeding of severely malnourished</li></ul>
Acute malnutrition are <10% with no aggravating factors	<ul style="list-style-type: none"><li>• No emergency food and nutrition intervention</li></ul>

### **Basic principles of planning nutrition emergency response**

- A coordinated approach
- Context specific assistance
- A general food basket based on providing 2100 kcal per person per day
- Timely distribution of an adequate, basic ration
- A standard food ration
- Community participation
- Monitoring, adjusting and targeting

## Management of nutrition in major emergencies

The following are the daily energy and protein requirements based on FAO/WHO recommendations with an assumption of BMI of 20-22 and on light activity (See Table below);

Energy requirement = 2100kcal/day

Protein requirement= 46g/day

### *Emergency phases and planning*

Phase 1 of the emergency	
This phase covers the outset and during initial stages of emergency	The recommended 2100 kcal/person as a reference figure although the calories can be adjusted based on information available immediately. Measures should be put in place to ensure the food ration's adequacy in addressing both macro- and micronutrient requirements. The food ration should also be adequate to address the nutritional needs of all sub groups. Strategies for collecting information to make necessary adjustments should be outline. This will therefore necessitate establishment of a monitoring system.
Phase 2 of the emergency	
Situation stabilized	This is achieved through periodic reassessment, further revision and adjustment of the reference figure based on the extra information about all the factors affecting energy requirements. It is imperative to lay down a plan detailing longer term assistance or phase down and phase out strategies.

## Feeding programme strategies in emergency situations

### A. General Feeding programmes

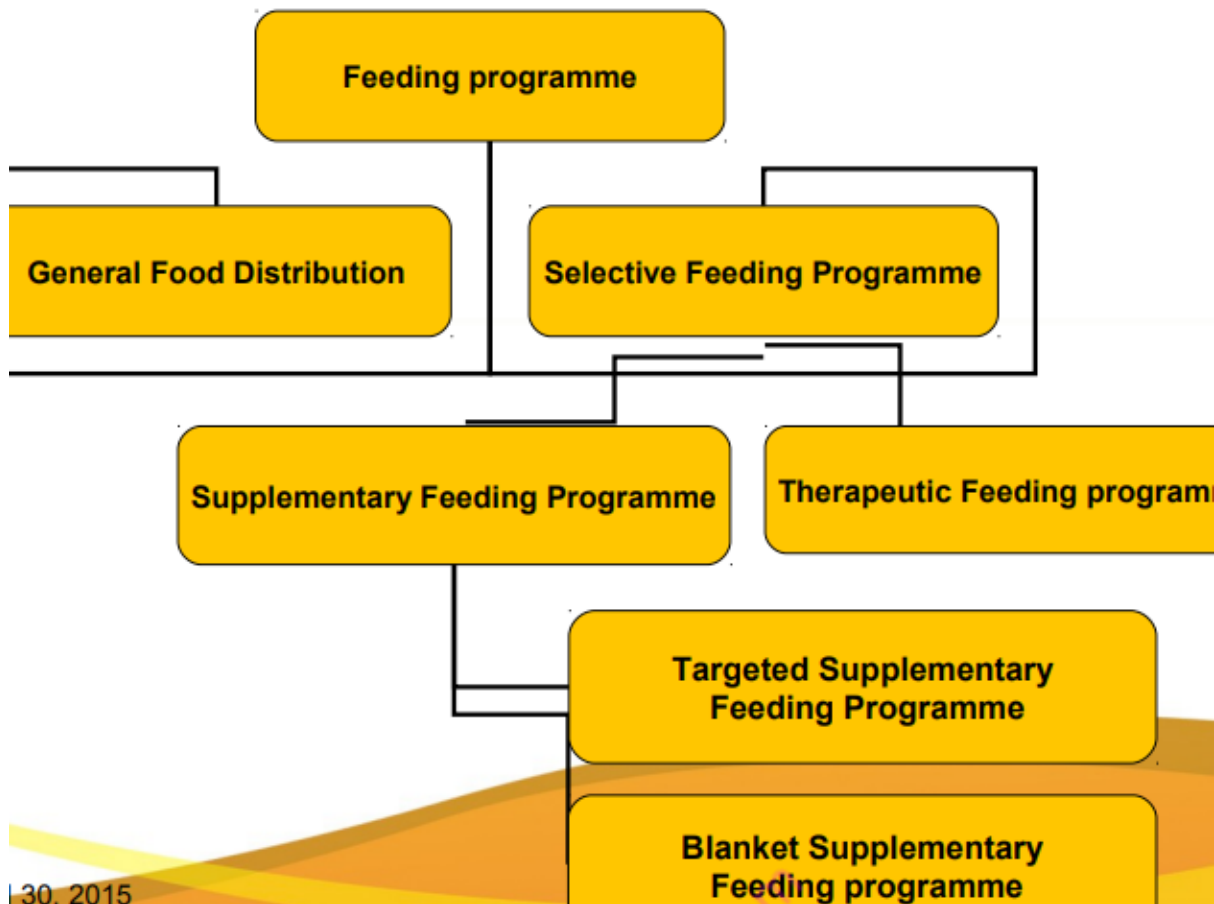
These feeding programmes provide a standard general ration

The aim of general feeding programmes in is mainly to cover food and nutritional requirements

### B. Selective Feeding Programmes

These are further divided into two forms of Selective Feeding Programme (See Figure);

- i) Supplementary Feeding Programme
- ii) Therapeutic Feeding Programme



### A. Supplementary feeding programmes

These programmes provide both nutrient-dense food and general ration

Supplementary feeding programmes aim to:

- Rehabilitate persons suffering from malnutrition
- Prevent a deterioration of at risk group by providing short-term measures. However, these measures should not be viewed as a means to make up for an inadequate general food ration.

Supplementary feeding programmes (SFPs) are further categorized into;

1. **Targeted SFPs:** aims at preventing moderately malnourished populations from becoming severely malnourished and to rehabilitating them.
  - Objectives;
    - Decrease of cases of acute & severe malnutrition
    - Reduction of excess mortality.
  - **Attributes of targeted SFPs;**
    - Individual registration, monitoring of weight, individual medical treatment.
  - **Target group for SFPs;**



- Individuals with or at risk of mild and moderate malnutrition and selected pregnant and nursing mothers
- **The most appropriate time to start Targeted Supplementary Feeding Program**
  - When the prevalence of malnutrition gets to 10-14%
  - When large numbers of children are predicted to become malnourished
  - When there is a prevalence of 5-9% acute malnutrition in presence of aggravating factors.

## 2. Blanket SFPs:

- Objective is mainly to prevent increase in PEM & micronutrient deficiency rates.
- **Attributes;**
  - No individual monitoring or registration
  - Selection of children- < 110cm in length.
  - Preventive medication – vitamin A, measles vaccination.
- **The most appropriate time to start Targeted Supplementary Feeding Program**
  - At onset of an emergency
  - When problems are experienced during delivery/distribution of general ration.
  - When the prevalence of acute malnutrition is 15% and above
  - When there is a prevalence of acute malnutrition is at 10-14% in presence of aggravating factors.
  - When there is an anticipated increase in rates of malnutrition epidemics.
  - When there is an outbreak of micronutrient deficiency

## Ways of distributing supplementary food

**On-site feeding (wet) ration:** Food is prepared in a central place and the beneficiaries consume the meal or snack at the site. The food will reach the targeted beneficiary but logistics may be expensive hence usually not recommended. Provide a minimum of two or three meals should be provided daily.

- i. **Take-home (dry) ration:** The regular (weekly or biweekly) distribution of food in dry form to be prepared at home
- ii. **Food by prescription:** Food is provided depending on individual assessment. It is packaged in small quantities (as medicine) to take home and consume as prescribed. The best place for implementing food for prescription intervention is health facility

## Characteristics of an adequate food ration

- Nutritionally balanced
- Diversification
- Does not go against cultural practices of the population
- safe for human consumption
- Appropriate and acceptable for all sub-groups of the population.

## B. Therapeutic Feeding Programmes

The objectives of TFP are to provide treatment for severely malnourished individuals and to reduce the risk of excess mortality and morbidity.

It consists of intensive medical and nutritional treatment

### Criteria for Admission in Therapeutic Feeding Program

- Children below the age of 5 years who are suffering severe malnutrition and/or children with oedema.
- The under-5s, adolescents and adults who are severely malnourished
- Low birth weight (LBW) babies
- Orphaned infants
- Mothers of infants with breastfeeding failure

### Criteria for Discharge from Therapeutic Feeding Program:

The usual practice has been to refer a child to a targeted SFP when he/she:

- Maintains a weight-for-height  $\geq 75\%$  of the reference media or “ $\geq -2.5$  Z-score” for two consecutive weeks.
- Displays a good appetite and is not sick.

## Nutritional Rehabilitation

### *Phase 1: Acute phase (phase of intensive care)*

This phase involves 24-hour inpatient intensive care where the patient is treated to treat/prevent infection and dehydration. Electrolyte imbalance is expected resolve and nutritional management started. The patient is provided with frequent feeds with therapeutic milk (10-12 per day). This phase should last for a maximum of one week.

### *Phase 2: Rehabilitation phase*

The patients should be provided with at least 6 meals per day in order to regain most of the weight lost. Psychological and medical care is very important during this phase. This phase is not expected to last more than five weeks

## Principles of management of nutrition in major emergencies

- Nutritional requirements knowledge
- Identification of the groups which are most vulnerable
- Meeting protein and energy requirements
- Meeting the requirements for minerals, vitamins & other specific nutrient
- monitoring accessibility of food and adequacy of dietary intake

### 8.3.3.3 Self-assessment

1. Identify vulnerable groups during emergency
2. Discuss methods used in situation analysis
3. Which one of the following groups do not qualify for admission in therapeutic feeding program
  - A. Children below the age of 5 years who are malnourished
  - B. Poor people
  - C. Low birth weight (LBW) babies
  - D. Mothers of infants with breastfeeding failure
4. Which one of the following is an aim of nutrition in emergency?
  - A. To reduce poverty levels
  - B. To reduce malnutrition mortalities
  - C. To bring peace in warring communities
  - D. To prevent natural disasters
5. The following are characteristics of an adequate food ration except:
  - A. Nutritionally balanced
  - B. Culturally acceptable
  - C. Safe
  - D. None
6. \_\_\_\_\_ is a type of food ration prepared in a central place and the beneficiaries consume the meal or snack at the site.
  - A. Food by prescription
  - B. On-site feeding ration
  - C. Take-home ration
  - D. Targeted supplementary feeding programmes

#### 8.3.3.4 *Tools, Equipment, Supplies and Materials*

- Biochemical results
- Calculator
- Anthropometric measurements
- WHO guidelines
- MOH
- Ministry of Education
- Skills lab
- Use of LCDs, video clips, charts and other teaching aids
- Invitation of competent expertise
- Computers with internet
- Library and resource centre

#### 8.3.3.5 *References*

Grobler-Tanner, C., & Collins, S. (2004). Community Therapeutic Care (CTC): a new approach to managing acute malnutrition in emergencies and beyond.

Young, H., Borrel, A., Holland, D., & Salama, P. (2004). Public nutrition in complex emergencies. *The Lancet*, 364(9448), 1899-1909.

Seaman, J. (1999). Malnutrition in emergencies: how can we do better and where do the responsibilities lie?. *Disasters*, 23(4), 306-315

World Health Organization. (2000). *The management of nutrition in major emergencies*. World Health Organization.

Som Nath Singh. Nutrition in emergencies: Issues involved in ensuring proper nutrition in post-chemical, biological, radiological, and nuclear disaster. *J Pharm Bioallied Sci*. 2010 Jul-Sep; 2(3): 248–252

[https://fsccluster.org/sites/default/files/documents/chapter\\_9\\_food\\_and\\_nutrition.pdf](https://fsccluster.org/sites/default/files/documents/chapter_9_food_and_nutrition.pdf)

[https://www.who.int/hiv/pub/prev\\_care/en/youngpeoplerar.pdf?ua=1](https://www.who.int/hiv/pub/prev_care/en/youngpeoplerar.pdf?ua=1)

A Toolkit for Addressing Nutrition in Emergency Situations, IASC June 2008.

<https://www.slideshare.net/DrSUHASINIKANYADI/nutritional-emergencies-2015>

[https://www.slideshare.net/razifshahril/5-nutrition-in-emergencies?from\\_action=save](https://www.slideshare.net/razifshahril/5-nutrition-in-emergencies?from_action=save)

The management of nutrition in major emergencies – WHO

Food security and nutrition in emergency – John Hopkins and International Federation of Red Cross

### 8.3.4 Learning Outcome 3: Provide nutrition and health interventions

#### 8.3.4.1 Learning Activities

Learning activity.	Special instructions.
1. Provide nutrition health education a. Identify population composition b. Identify target audience c. Identify barriers of success	<ul style="list-style-type: none"><li>• Prioritize problem</li><li>• Create community partnership</li><li>• Conduct nutrition education sessions with clients</li></ul>
2. Provide therapeutic feeds a. Identify population composition	<ul style="list-style-type: none"><li>• Establish individual nutritional requirements</li><li>• Budget for therapeutic feeds</li><li>• Issue therapeutic feeds</li><li>• Implement supplementary food distribution</li><li>• Treat severe acute malnutrition and operate therapeutic and supplementary feeding centres</li><li>• Select commodities that meet the energy, protein, fat and micronutrient requirements of the population</li><li>• Document therapeutic feeding</li></ul>
3. Check medical/nutrition underlying causes a. Assess client medical observation b. Assess client physical examination	<ul style="list-style-type: none"><li>• Identify medical conditions</li><li>• Relate medical condition and nutritional status of individuals</li></ul>

#### 8.3.3.2 Information Sheet

##### Nutrition Education

This is a form of health education but specific to nutrition and nutrition related issues. Nutrition education includes;

- Conventional education
- Social marketing
- Health communication
- Empowerment actions.

Consequently, a vast range of activities such as peer education, training of health workers, community mobilization, and social marketing are considered examples of nutrition education interventions

### Steps in Conducting Nutrition Education Sessions

- Identify problems
- Prioritize the problem
- Identify the target group/person
- Build consensus about the problem with the individual or group
- Identify blocks e.g. lack of resources, beliefs
- Select appropriate communication channel of communication (e.g. demonstration, songs, poems)

### Health Assessment in Emergency

Malnutrition and disease are closely linked and this relationship needs to be addressed while providing nutrition care in emergency.

Health assessment includes determining the disaster has health-related risk factors, existing health problems, risk of increase in morbidity, mortality rate, access to health care services, and availability of health staff.

Factors that affect health are also assessed. For example, housing, water and sanitation and waste management.

### Creating Community Partnerships

For effectiveness, nutrition care providers need to partner with communities in finding lasting solutions to their problems. Community partnerships bring stakeholders together to share knowledge and resources.

#### Steps in creating a community partnership:

- **Identify partners:** Partnerships for sustainable development need interested and committed partners who share the project idea and who can influence and support the partnership goal.
- **Develop a community profile:** Community profile is a snapshot of the community, as a whole. (Population, Income levels, Educational levels, Ethnic make-up, Unemployment rates, Crime statistics).
- **Initiate dialogue among potential partners:** Explain what you're doing, why you're doing it and how you plan to do it.
- **Organize community meetings:** This brings various viewpoint, a perfect setting to exchange ideas and information.

- **Identify Issues:** Allow community members to identify problems they're facing, and then identify those that you can help to solve.
- **Formulate your plan :** Formulate objectives and identify roles of various stakeholders
- **Take action / Implement plan:** Implement the proposed solutions. Monitor to identify discrepancies from expected outcomes.
- **Maintain partnership:** Take measures to ensure sustainability of the project so as to avert such disasters in future.

### **Nutrition programme elements**

The choice of actions from a more comprehensive portfolio of intervention includes (but not limited) the following;

- a) General food assistance
- b) Management of severe acute malnutrition
- c) Management of moderate acute malnutrition
- d) Delivery of micronutrients
- e) Infant and young child feeding in emergencies
- f) Treatment of diarrhoea with oral rehydration therapy/zinc

Energy needs are supplied through various commodities such as cereal, blended food and pulses. Protein should account for 10-12% of total energy intake.

17% should be provided by fat, while the rest should be from carbohydrates.

### **Macronutrient requirements**

- Meeting of energy requirements through a range of commodities with adequate protein content.
- According to WHO and FAO recommendation, protein should provide at least 10- 12% of total energy
- It is also recommended that fat should provide.at least 17% of energy in the ration
- An adequate food ration should take into consideration the local dietary preferences.
- Mixing different proteins of plant origin sufficiently meets the requirements of macronutrients of a population

**Examples of rations for nutrition emergency (macronutrients) as per international average minimum energy requirement**

FOOD ITEMS	RATIONS (g) Examples				
	1	2	3	4	5
Cereals	400	450	350	400	400
Pulses	60	60	100	60	50
Oil (vitamin A fortified)	25	25	25	30	30
Fish/meat	-	10	-	30	-
Fortified blended foods	50	40	50	40	45
Sugar	15	-	20	-	25
Iodized salt	5	5	5	5	5
Energy: kcal	2113	2075	2113		
Protein(in gm and in % kcal)	58g; 11%	71g; 13%	65g; 12%		
Fat(in gm and in % kcal)	43g; 18%	43g; 18%	42g; 18%		

**Micronutrients requirement**

The population which is affected by emergency situations may suffer endemic micronutrient deficiencies, worsened by a general decline in nutritional status. In order to determine the micronutrient adequacy of a ration, a straightforward comparison of the population’s daily micronutrient requirements with the estimated level of micronutrients in the basic ration is required.

The major undoing of depending on food assistance is that the rations tend to put the populations at risk of vitamin and mineral deficiency diseases. This calls for concerted efforts within the context of emergency food assistance programs with an aim to recognize factors that boost the likelihood of deficiency diseases.

**Daily micronutrients requirements for emergency food aid**

Vitamin/Mineral	Recommended Daily Intake (RDI)	Deficiency diseases
Vitamin A	500 µg	Xerophthalmia
Thiamine (B1)	0.9mg	Beriberi
Riboflavin (B2)	1.4mg	
Niacin (B3)	12mg	Pellagra
Folic acid/Folate	160 µg	
Vitamin C	28.0 mg	Scurvy
Vitamin D	3.8 µg	Rickets



Iron	22mg	Anaemia
Iodine	150 µg	IDD (goitre)

### **Fortification of food in nutrition emergency**

Food fortification refers to the process adding one or more micronutrients to food during processing. Fortified blended food aids in ensuring that a number of micronutrients are consumed and its inclusion forms an important part of the basic ration in an emergency situation, especially for the micronutrient needs of young children, pregnant and lactating mothers, and the elderly.

Different foods should be fortified with the appropriately matched micronutrients (Table X).

#### ***Food fortification in nutrition emergency***

<b>Food Item</b>	<b>Nutrients fortified</b>
Vegetable oil	Vitamin A and D
Salt	Iodine
Wheat and maize flour	Vitamin A, thiamine (B1), Riboflavin (B2), Niacin (B3), Folic acid, Iron
Blended foods	Vitamin A, thiamine, riboflavin, niacin, folic acid, vitamin c and B12, iron, calcium and zinc

### **Modification of the ration based on food accessibility by populations**

Emergency food needs assessments: this should be carried out while focusing on the overall goals and operational objectives of food assistance. They should include;

- Saving of lives
- Preservation of productive assets
- Prevention of mass migration
- To maintain nutritional status especially among pregnant and lactating women as well as other groups at high risk.
- To ensure access to an adequate diet for all population group
- To minimize damage of food production and marketing systems due to the emergency situations

### **Meeting special nutritional requirements of the most vulnerable populations**

#### ***1) Infants and young children***

Research shows that malnutrition during the formative years of a child's life has adverse effects on cognitive, motor-skill, physical, social and emotional development which could be life long. Therefore, so as to protect and promote optimal infant and child feeding practices, specific interventions are critical during emergencies.

It is imperative to routinely include and sustain these interventions throughout the period of response in any relief response. It is worth noting that the nutrients found in breast milk exceeds the amount found in breast milk substitutes. Breast milk also plays a role in the protection of children from infections in addition to providing all the nutrient required by the infants.

In most emergencies, breastfeeding becomes even more critical for infant nutrition and health because artificial feeding in emergencies may increase the risk of diarrheal diseases and malnutrition, which in turn significantly increases the risk of infant death. If completely required, infant formula should only be used when all other options have been exhausted.

- Supplementary feeding may be an important intervention for protecting the nutritional status of lactating mothers.

### **Guiding principles for feeding infants during emergency**

All infants (including those born to populations affected) should be put to breast within 30 minutes to 1 hour after birth and be exclusively breastfed for the first 6 months as recommended by the world Health Organization (WHO). In cases where mothers are incapacitated or absent, every effort should be made to come up with ways to breast feed the infants before opting to formula feeding.

A conducive environment that supports exclusive breastfeeding for the first six months, and continued breastfeeding for up to two years should be created and maintained. Strict control measures should be in place to monitor quantity, distribution and use of breast milk substitute e.g. infant formula at emergency sites should be strictly controlled, using the following guidelines:

- The infant formula should have adequate nutrients, be cup-fed, and always be available for infants who need it.
- Adequate training and equipment should be provided for every individual who is responsible for feeding infant formula to ensure its safe preparation and use.
- Feeding infant formula to a minority of children should not interfere with protecting and promoting breastfeeding in majority.
- Use of infant feeding bottles in emergency setting should be discouraged and cup feeding promoted.

### **Complementary feeding for older infants and young children**

Complementary feeding can be a challenge during emergencies, due to some constraints such as difficulties in preparing the available foods into a soft, semi-solid form. Moreover, basic food aid commodities such as cereals, pulses and oil, do not by themselves readily meet nutritional needs of young children.

There are a number of foods that are recommended for use during preparation of suitable complementary foods (See Table).

### *Options for addressing nutritional needs of older infants and young children*

Food source	Examples	Remarks
1. Basic food aid commodities from general ration with supplements of inexpensive locally available food	Cereals, pulses, oil and sugar combined together with a variety of vegetables and fruit	Recipes can be developed using local foods with input from nutrition and/or Health expertise. It is very critical to understand and observe traditional complementary feeding practices
2. Blended foods(as parts of general ration)	Corn—soya blend, wheat-soya blend	As a measure to increase digestibility of blended foods, they are usually subjected to roasting.  Blended foods are fortified with zinc and iron and other micronutrients for growth and development
3. Additional foods in supplementary feeding programs	Fruits, vegetables, fish, eggs among others	Valuable source of vitamins and minerals

### **Complementary intervention of nutrition for pregnant and lactating women in emergency**

#### **1. Fortified food items**

Fortified blended food commodities containing 10-12 % of energy from fat should be provided. It is very critical to modify the blended food so as to meet two-thirds of daily needs for all micronutrients, with emphasis on iron, folic acid and vitamin A.

#### **2. Micronutrient supplementation**

It is recommended that pregnant women be prescribed daily supplements of iron (60mg/day) and folic acid (400µg/day) while lactating women receive 400000 IU of vitamin A in 2 doses of 200000 IU each in an interval of a minimum of 24 hours within six weeks after delivery.

#### **3. Water**

Pregnant and lactating women need to have a sustainable access to sufficient and safe drinking water so as to meet their daily requirements

#### **4. Malaria in pregnancy**

Pregnant women residing in areas where malaria is endemic should be given sulphadoxinepyrimethamine at the beginning of the second and third trimesters. These women should also be encouraged to use an impregnated bed net throughout pregnancy.

## **5. Prophylaxis for management of intestinal parasites**

Each affected woman should be given 500g of mebendazole during the 2<sup>nd</sup> and 3<sup>rd</sup> trimesters.

## **6. Nutrition education and counselling for women and communities.**

Pregnant and lactating women should be given nutrition education and counselling as a way of ensuring they make informed choices on the foods to take and also feed their children.

### **Nutritional needs of older persons**

The energy requirements for older persons normally decreases compared with younger adults resulting from reduced physical activity and decreased basal metabolism. The requirements for micronutrients, however, do not decrease. Therefore, an optimal diet for older persons must meet the micronutrients requirement even with reduced energy intakes.

It is also important to consider that older persons are required to take sufficient intakes of fluids to prevent dehydration and improve digestion.

Theoretically, a well-planned general ration is usually sufficient for older persons.

### **Considerations to the nutritional needs of older persons**

#### **i. Access to easily digestible micronutrient rich foods**

Older persons and their households should be provided with blended foods. In situations where blended food is not provided to the whole population, under 5's, pregnant and lactating women and older persons should be prioritized. Access to milling facilities in situations where whole grain cereal is provided. Older persons should be assisted and encouraged in small scale horticultural activities to increase consumption of fresh foods.

#### **ii. Family and community support for food preparation**

Those older persons who lack family or community support, can be assisted through community based support programs. Assistance with tasks such as collection of rations, food preparation and collection of water may be required for older persons.

### **Programme indicators**

- i. Vulnerability indicators
  - o Structural risk
  - o Process
- ii. Outcome indicators
  - o Prevalence of PEM Prevalence of micronutrient deficiencies
  - o Mortality
  - o Morbidity/epidemics

### 8.3.4.3 Self-Assessment

1. Describe methods of health education in emergency nutrition
2. Describe therapeutic foods offered in emergencies
3. Match the following micronutrients with the deficiency disorder that results from inadequate intake

Vitamin/Mineral	Deficiency diseases
A. Vitamin A	A. Beriberi
B. Thiamine (B1)	B. Goitre
C. Riboflavin (B2)	C. Xerophthalmia
D. Niacin (B3)	D. Ariboflavinosis
E. Vitamin C	E. Anaemia
F. Vitamin D	F. Rickets
G. Iron	G. Pellagra
H. Iodine	H. Scurvy

### 8.3.4.4 Tools, Equipment, Supplies and Materials

- Diet history data
- Biochemical results
- Calculator
- Anthropometric measurements
- WHO guidelines
- MOH
- Ministry of Education
- Skills lab
- Use of LCDs, video clips, charts and other teaching aids
- Invitation of competent expertise
- Computers with internet
- Library and resource centre

### 8.3.4.5 References

Basic Nutrition Counselling Skill Development: A Guideline for Lifestyle Management,  
Kathleen D. Bauer, Carol A. Sokolik

Som Nath Singh. Nutrition in emergencies: Issues involved in ensuring proper nutrition in post-chemical, biological, radiological, and nuclear disaster. *J Pharm Bioallied Sci.* 2010 Jul-Sep; 2(3): 248–252

[https://fscluster.org/sites/default/files/documents/chapter\\_9\\_food\\_and\\_nutrition.pdf](https://fscluster.org/sites/default/files/documents/chapter_9_food_and_nutrition.pdf)

[https://www.who.int/hiv/pub/prev\\_care/en/youngpeoplelar.pdf?ua=1](https://www.who.int/hiv/pub/prev_care/en/youngpeoplelar.pdf?ua=1)

A Toolkit for Addressing Nutrition in Emergency Situations, IASC June 2008.

<https://www.slideshare.net/DrSUHASINIKANYADI/nutritional-emergencies-2015>

[https://www.slideshare.net/razifshahril/5-nutrition-in-emergencies?from\\_action=save](https://www.slideshare.net/razifshahril/5-nutrition-in-emergencies?from_action=save)

The management of nutrition in major emergencies – WHO

Food security and nutrition in emergency – John Hopkins and International Federation of Red Cross: [https://fscluster.org/sites/default/files/documents/chapter\\_9\\_food\\_and\\_nutrition.pdf](https://fscluster.org/sites/default/files/documents/chapter_9_food_and_nutrition.pdf)  
Retrieved on 5/10/2019

Suchman, A. L., Botelho, R. J., & Walker, P. H. (1998). *Partnerships in Healthcare: Transforming Relational Process*. Rochester, NY: University Rochester Press.

easyvet.com

### 8.3.5 Learning Outcome 4: Monitor implementation of interventions

#### 8.3.5.1 Learning Activities

Learning activity.	Special instructions.
1. Evaluate outcomes of nutrition related diet history	<ul style="list-style-type: none"> <li>• Implement monitoring and follow up actions, data collection and analysis</li> <li>• Assess the ability of the population to access other food sources and adjust the ration.</li> <li>• Compare dietary intake with goals of nutrition intervention</li> <li>• Document outcome</li> </ul>
2. Assess anthropometric measurement outcomes <ul style="list-style-type: none"> <li>a. Analyse anthropometric measurement outcomes</li> </ul>	<ul style="list-style-type: none"> <li>• Document client progress</li> <li>• Compare anthropometric outcomes with goals of nutrition intervention</li> <li>• Review nutrition intervention</li> </ul>
3. Evaluate physical and clinical outcomes <ul style="list-style-type: none"> <li>a. Analyze physical finding outcomes</li> </ul>	<ul style="list-style-type: none"> <li>• Compare physical and clinical outcomes with goals of nutrition intervention</li> <li>• Document client progress</li> <li>• Review nutrition intervention</li> </ul>
4. Assess outcome of therapeutic feeds <ul style="list-style-type: none"> <li>a. Analyze outcome of therapeutic feeds</li> </ul>	<ul style="list-style-type: none"> <li>• Establish variance from expected nutrition goals outcomes</li> <li>• Monitor the situation following any such adjustments</li> </ul>

#### 8.3.4.2 Information Sheet

##### Definitions:

- **Monitoring:** an ongoing review of nutrition intervention outcomes to assess the process of achievement of the goals set at planning. It assesses progress by measuring pre-determined indicators.
- **Evaluation:** Evaluation is the systematic process of assessing the relevance, effectiveness, efficiency and impact of a nutrition intervention against set goals. The outcome helps to make the decision to discharge the client or to modify the care plan.

Monitoring and evaluation in nutrition involves monitoring, measuring and evaluating nutrition care indicators. Through monitoring and evaluation, a nutritionist is able to determine whether or not a certain intervention is effective. Effectiveness is achieved when the goals of the nutrition intervention are achieved.

Data on the nutrition outcome indicators are collected and analyzed, after which the findings are compared to initial nutritional status, goals set for the intervention, as well as reference standards. It helps assess the impact of a nutrition intervention as well as identify gaps in the care process.

### **Importance of Monitoring and Evaluation**

- Helps to establish the progress of a nutrition intervention
- Determines if an intervention is in line with objectives and when alterations may be necessary
- A means of assessing quality of activities involved in a nutrition intervention
- Monitoring and evaluation can be used as proof of an intervention
- Demonstrates the impact of an intervention

Monitoring and Evaluation of nutrition in emergency require routine data quality checks as well as continuous data quality checks in order to improve the quality of indicators. Reporting requires that data should meet the following requirements:

1. **Accuracy:** It is important to accurately record the patients'/clients' vitals such as weight, height, MUAC, HB etc. Equipment-routine maintenance to be done in each facility
2. **Reliability:** Recording accurately is not the only requirement since recorded data needs to be reliable so that the conclusions drawn from analysis are not spurious. For example, the height of an adult should remain the same most of their adult life, and should not vary on every date of distribution. Remember, garbage-in garbage-out
3. **Timeliness:** For effective management of patients, the data collected needs to be collected in good time so as not to delay the decision making process
4. **Completeness:** Indicators are generated from a combination of data components. It is therefore important that the data collected is complete so that the information generated is whole. Good data should be complete, that is, it has every necessary part or every detail that is wanted. For example, in calculating BMI, both variables (weight and height) are needed. It follows that when one misses, BMI cannot be calculated. Similarly, a computer generates accurate Z scores, when date of birth and anthropometric measurements are recorded
5. **Precision:** For all measurements, it is important that the correct readings from the measuring instrument are collected. Ensure that all anthropometric equipment is calibrated before taking measurements
6. **Storage** -all equipment should be properly stored for safety
7. **Confidentiality:** For all patient records, it is important to maintain confidentiality. This means that details of a patient's records cannot be divulged to unauthorized persons. Medical records should also be kept under lock and key



## **Management of food related issues**

- i. Temporary substitution of food items
- ii. Packaging of food aid commodities
- iii. Exchange and trade of rations
- iv. Quality control

## **Indicators of effectiveness of nutritional relief**

General feeding programme: one should consider the following;

- Coverage: to see if most vulnerable populations are benefiting from the interventions
- Adequacy of ration
- Impact on the target population

## **Temporary substitution of food items**

If some food commodities are not available, they can be replaced by another food in order to maintain the energy and/or protein level of the food basket. These substitute should only be considered as a temporary measure and should not be implemented for longer than one month.

Inappropriate substitutions- such as the provision of unfamiliar foods, the use of unsolicited donations of expired foods or the use of highly processed commercial foods should be avoided.

## **Packaging of food aid commodities**

Proper food packaging is necessary to preserve and protect the quality of commodities. Proper labelling of food aid commodities provides vital information to field staff. Packaging should be environmentally friendly and, if possible, serve as an additional resource to the population.

## **Exchange and trade of rations**

The practice of exchange, bartering or resale of food aid commodities in emergency situations may facilitate diversification of food and enable access to a number of foods that are not provided in the ration.

The sale of food in the marketplace does not necessarily indicate a food surplus. The rationale for trading food may simply be to diversify the diet and to improve its palatability and quality.

## **Quality control**

A system of quality control for all commodities must be implemented to ensure that food distributed to refugees is of good quality and safe for human consumption. The acceptability and consumption of food is directly influenced by the quality of the food.

Suppliers of food commodities must be carefully scrutinized to ensure that a regular quality control check is done. All food received should have a minimum shelf life of six months. Adequate storage structures should be in place. Written procedures should be in place for checking the quality of food at the distribution stage. Fumigation and food quality control measures should be in place.

## Monitoring and follow up

- First of all, a monitoring system must be established to ensure that any inadequacy in the ration are discovered in a timely manner.
- Secondly, a strategy outlining actions to be taken in response to food shortages or inadequate rations should be in place.
- Thirdly, given that access to food can change dramatically over time, and the opportunities for obtaining food through the populations own means differs significantly between situations.
- It is important to make strong links between food aid and the potential for food production from the outset of the emergency.

### 8.3.5.3 Self-Assessment

1. Discuss characteristics of quality record keeping
2. \_\_\_\_\_ is an ongoing review of nutrition intervention outcomes to assess the process of achievement of the goals set at planning. It assesses progress by measuring pre-determined indicators.
  - A. Nutrition intervention
  - B. Monitoring
  - C. Evaluation
  - D. Diagnosis
3. Indicate whether the following statements are true or false about monitoring and evaluation
  - A. Helps to establish the progress of a nutrition intervention
  - B. Determines if an intervention is in line with objectives and when alterations may be necessary
  - C. It cannot be used to assess quality of activities involved in a nutrition intervention
  - D. Monitoring and evaluation can be used as proof of an intervention
  - E. Monitoring and Evaluation of nutrition in emergency require routine data quality checks
  - F. Demonstrates the impact of an intervention

### 8.3.5.4 Tools, Equipment, Supplies and Materials

- Diet history data
- Anthropometric equipment
- WHO guidelines

- MOH
- Ministry of Education
- Skills lab
- Use of LCDs, video clips, charts and other teaching aids
- Invitation of competent expertise
- Computers with internet
- Library and resource centre

### 8.3.5.5 References

Simko, M. D., & Cowell, C. (1995). *Nutrition assessment: A comprehensive guide for planning intervention*. Jones & Bartlett Learning.

Anyang'Nyong'o, H. P. P., & EGH, M. Kenya National Clinical Nutrition and Dietetics Reference Manual First Edition.

Som Nath Singh. Nutrition in emergencies: Issues involved in ensuring proper nutrition in post-chemical, biological, radiological, and nuclear disaster. *J Pharm Bioallied Sci.* 2010 Jul-Sep; 2(3): 248–252

[https://fscluster.org/sites/default/files/documents/chapter\\_9\\_food\\_and\\_nutrition.pdf](https://fscluster.org/sites/default/files/documents/chapter_9_food_and_nutrition.pdf)

[https://www.who.int/hiv/pub/prev\\_care/en/youngpeoplelar.pdf?ua=1](https://www.who.int/hiv/pub/prev_care/en/youngpeoplelar.pdf?ua=1)

A Toolkit for Addressing Nutrition in Emergency Situations, IASC June 2008.

<https://www.slideshare.net/DrSUHASINIKANYADI/nutritional-emergencies-2015>

[https://www.slideshare.net/razifshahril/5-nutrition-in-emergencies?from\\_action=save](https://www.slideshare.net/razifshahril/5-nutrition-in-emergencies?from_action=save)

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### 8.3.6 Learning Outcome 5: Document nutritional intervention during emergencies

#### 8.3.6.1 Learning Activities

Learning activity.	Special instructions.
1. Obtain MOH registers	<ul style="list-style-type: none"><li>Record relevant details of the intervention</li><li>Maintain records of the intervention</li></ul>
2. Obtain WFP registers	<ul style="list-style-type: none"><li>Record relevant details of the intervention</li><li>Maintain records</li></ul>

#### 8.3.6.2 Information Sheet

**Emergency plan:** policies and procedures developed by an organisation to be used during an emergency or disaster to prevent or minimise damage to an organisation, its people and its resources.

**Record:** A document regardless of form or medium created, received, maintained and used by an organisation (public or private) or an individual in pursuance of legal obligations or in the transaction of business, of which it forms a part or provides evidence.

Documentation of during emergencies is key since it provides information concerning the care plans and processes undertaken. It also provides information on nutrition and health interventions and how monitoring implementation of interventions was done during nutrition in emergencies.

#### Emergency plan

The emergency plan should address the following three actions required to help the organisation deal with an emergency:

- readiness: developing a combination of preventive measures to forestall emergencies or disasters and strategies for dealing with disaster should it occur
- response: adhering to procedures to deal with any emergency situation that arises
- recovery: restoring records and facilities to their usual condition and resuming normal activities

#### Compiling an emergency plan

A disaster plan document should be drawn up by the emergency response team. The disaster plan should do the following.

- It should include an introduction and policy statement by the director of the records and archives institution

- It should briefly describe possible emergencies or disasters that may arise.
- It should set out the objectives of the plan, to
  - o facilitate effective methods of preventing damage to or destruction of records
  - o limit damage and prevent escalation of the situation
  - o facilitate the effective co-ordination of recovery tasks
  - o prevent injury to personnel or property
- It should include a description of emergency procedures for the institution, including information about
  - o how to sound the fire alarm
  - o evacuation procedures
  - o the names of staff who will take charge in the event of an emergency
  - o contacts for assistance with salvage and recovery
- It should include a list of full contact information for all staff who may be called in the event of an emergency, including office and residential telephone numbers. Those listed should include facilities managers, any specialist conservation/ preservation staff, senior management, and so on. Also on the list should be the names and contact information of volunteers who can be called to assist with recovery operations.
- It should include a description of items of special concern, prioritising those records in a salvage operation and indicating their location in the building.
- It should include floor plans of the building that detail power and water supply cut-off points, drainage points, and so on. Areas that may be used for storing records during salvage work (such as for packing material prior to transfer to a freezing facility) should be clearly marked.
- It should list supplies of available emergency equipment and materials. It may be necessary in large organisations to hold duplicate stores at strategic locations throughout the building.
- It should identify the full contact information for any external suppliers who might be able to provide equipment or store, freeze or transport records.
- It should include any agreements that have been negotiated with other agencies for mutual assistance in the event of a disaster.
- It should include guidelines for the salvage of records.
- It should include information about completing an incident report.

### **Principles of Good Record Keeping**

Some key factors underpin good record keeping. The client's records should:

- Be factual, consistent and accurate;
- Be updated as soon as possible after any recordable event;
- Provide current information on the care and condition of the patient;

- Be documented clearly in such a way that the text cannot be erased;
- Be consecutive and accurately dated, timed and all entries signed (including any alterations);
- All original entries should be legible. Draw a clear line through any changes and sign and date;
- Records must be stored securely and should only be destroyed following your local policy;
- Avoid meaningless phrases, speculation and offensive subjective statements/insulting or derogatory language;

The most common deficiencies in record keeping include:

- An absence of clarity
- Inaccuracies
- Spelling mistakes
- Missing information
- Failure to record action taken when a problem has been identified.

### **Importance of Record Keeping**

- Documents nutrition service rendered
- Shows progress of care
- Planning and evaluation of service for future improvement
- Guide for professional growth
- Helps judge the quality and quantity of work done
- Communication tool between nutritionist and other staff involved in the care team.

### **Characteristics of Quality Record Keeping**

- Factual
- Accurate
- Complete
- Organized
- Promotes confidentiality

### **Initial Damage Assessment Records**

The initial damage assessment phase takes place as soon as access to the site of the incident is granted. This documentation should capture the broad picture quickly, without bogging down in details. Information gathered should include the following:

**Is the immediate cause of the emergency under control?**

**Is the site of the incident safe?**

**Size/scope:**

- How big is the damaged area?
- How many floors are involved?
- How many rooms?
- How many objects?
- What is the nature of the damage?
- How serious is the damage?

4. Objects damaged:

- What collections are damaged?
- What types of objects/materials are involved?
- How long have items been wet?

5. Staff needed:

- What additional personnel will be needed?

6. Equipment and supplies needed:

- For mitigation operation
- For more detailed documentation of damage
- For move of collections to a safe location

7. Services needed:

- Will there be need for a triage or alternate storage site?
- Will there be need for transportation to an alternate site?
- Will conservators need to be called in?

## **Emergency Incident Records**

These records, which would normally be kept by the Emergency Plan Coordinator, include a detailed chronology of the incident in real time, records of people involved in the incident and the aftermath, and a summary statement after the incident is declared over.

### ***A. Chronology of the Emergency***

*1. Written records:*

Keep a log of:

- Events
- Actions
- Decisions
- Radio, telephone, and in-person communications

For each, note date and time, and the person providing the information.

## 2. *Photographic records:*

- Photograph or videotape the incident site and damage.
- Photograph or videotape recovery activities.

### ***B. Personnel Records***

1. Keep a list of names, addresses and phone numbers of all staff and volunteers involved in the incident and in the recovery operation.
3. Keep track of staff and volunteer time spent on the incident and the recovery.
4. Document injuries or illness related to the incident.

### ***C. Summary Documentation***

After the incident has been brought under control, the participants should meet to gather complete information about the incident. Write a summary that includes:

- The type of incident, and the date and time of the incident.
- Who witnessed or discovered the problem.
- Who was notified.
- Describe conditions surrounding the incident: weather, building conditions, warnings, human elements, equipment involved.
- Describe actions taken by staff to address the incident, and who was involved.
- Describe actions taken by outside authorities such as fire and police.
- Describe actions required to recover from the incident: building stabilization, move of collections, conservation, etc.

#### ***8.3.6.3 Self-Assessment***

1. Describe the principles of good record keeping
2. Which of the following is not an action required to help the organisation deal with an emergency:
  - A. Readiness
  - B. Realignment
  - C. Response
  - D. Recovery



3. \_\_\_\_\_ are policies and procedures developed by an organisation to be used during an emergency or disaster to prevent or minimise damage to an organisation, its people and its resources.
- A. Personnel management
  - B. Emergency plan
  - C. Disaster management
  - D. Disaster preparedness
4. \_\_\_\_\_ is a document created, received, maintained and used by an organisation or an individual in pursuance of legal obligations or in the transaction of business.
- A. Emergency plan
  - B. Documentation
  - C. Record
  - D. Plan

#### ***8.3.6.4 Tools, Equipment, Supplies and Materials***

- Computers.
- Stationeries e.g. registers, files, pens and papers.
- Inventory (keep hard copy off-site)
- Strong Adhesive Labels
- Holdings priorities (hard copy)
- Blank Paper Blank
- Inventory Sheet
- Pencils
- Permanent Markers
- Camera (film, batteries)
- Video Camera
- Clipboard Laptop and
- Battery Back-up
- Photographic Log
- Tape Recorder
- WHO guidelines
- MOH guidelines
- Ministry of Education

- Skills lab
- Use of LCDs, video clips, charts and other teaching aids
- Invitation of competent expertise
- Computers with internet
- Library and resource centre

### **8.3.6.5 References**

1. <http://www.health.go.ke/wp-content/uploads/2018/11/Clinical-Nutrition-Manual-SOFTY-COPY-SAMPLE.doc>
2. <https://www.andeal.org/vault/2440/web/files/20140602-NME%20Snapshot.pdf>
3. <https://www.longdom.org/open-access/how-can-we-assess-the-nutritional-status-of-an-individual-2155-9600-1000640.pdf>
4. [https://www.who.int/diagnostics\\_laboratory/documents/guidance/pm\\_module15.pdf?ua=1](https://www.who.int/diagnostics_laboratory/documents/guidance/pm_module15.pdf?ua=1)

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