ASSESSMENT AND SURVEILLANCE OF NUTRITIONAL STATUS IN EMERGENCIES
INDICATORS OF MALNUTRITION USED IN EMERGENCY CONTEXT

- Body measurement indicators
  (Anthropometry)
- Clinical and biological indicators
Anthropometry

* Body measurement: Weight, height, Left Mid Upper Arm Circumference
* Other indices: Age, bilateral edema
MUAC

- Indicator of risk mortality for 6 months to 5 years old children
- Ideal indicator: MUAC/Age (Zscore)

Moderate cases: MUAC/Age < -2 Zscore

Severe cases: MUAC/Age < -3 Zscore
Indicators of malnutrition

- oWeight/Age (underweight)
- Height/Age (stunting= chronic form)
- oWeight/Height (Wasting)
- oPitting bilateral edema (Kwashiorkor)

Unit = Standard deviation or Zscore
Classification of cases of malnutrition amongst preschool and school age children

- Chronic malnutrition: Stunting
  W/H <= -2 (severe <= -3) Zscore
- Acute malnutrition: Wasting
  W/H <= -2 (severe <= -3) Zscore;
- Kwashiorkor: Pitting bilateral edema
Severe Acute Malnutrition

- N Severe cases of acute malnutrition = n cases of severe wasting + n cases of kwashiorkor

- GAM = W/H<-2 + Kwashiorkor
- SAM = W/H<-3 + Kwashiorkor
Classification of cases of malnutrition amongst adults

Body mass index (BMI)

\[ \text{BMI} = \frac{\text{Weight}}{(\text{Height})^2} ; \text{Unit: Kg/m}^2 \]

- Severe thinness: BMI < 16.0
- Moderate th.: BMI 16.0 – 16.99
- Marginal th.: BMI 17 – 18.49
- Normal range: BMI 18.5 – 24.99
Indicators of micronutrient deficiencies

Common deficiencies in emergencies

Vitamin A, C, B3 (Niacin), B1
Minerals: Iodine, iron, Zinc
Clinical signs of micronutrient deficiencies

- **Vit A**: Night blindness, conjunctival xerosis, bitot’s spot
  - **Iron**: Tiredness, pallor
  - **Iodine**: Goitre, cretinism
- **Niacin (vit B3)**: Pellagra (diarrhoea, dermatosis, pellagra)
  - **Vit C (scurvy)**: Bleeding, purple, swollen gums
Biochemical assessment of micronutrient deficiencies

Iron: Haemoglobin level, erythrocyte volume fraction

Iodine: Urinary iodine level

See page 221 “The management of Nutrition in major Emergencies, WHO, 2000”
Most vulnerable population

- Children under 5:
  stunting, wasting, kwashiorkor, vit A, C, iron, zinc, iodine deficiencies
- Pregnant women:
  Thinness, low weight gain (<9 Kg)
  Iodine, Iron, folic acid, vit A, C def.
- Lactating women: Thinness,
  Iodine, Iron, vit A, C def.
- Adults:
Nutritional assessment in emergency situation
Routine assessment

Nutrition surveillance system

Objectives: Early warning system
Suggested indicators to be used

- Outreach health posts, communities and health facilities:
  Weight/Age, bilateral edema, under 5 mortality

- Health facilities = sentinel sites:
  Weight/height, bilateral edema, under 5 mortality, signs of micronutrient deficiencies, food consumption < 2 years children

- Other indicators: market prices, food security indicators
Non routine assessment

- Rapid assessment
  - Surveys
Rapid health assessment

Objectives:
Rapid referral then treatment of severe malnourished children

Methodology:
Screening of 6 months to 5 years old children with MUAC/Age<-3 Zscore
Surveys

Objectives:
Defining the type of nutritional intervention to implement in order to reduce under 5 mortality rate due to malnutrition
Surveys (Cont.)

Methodology
- Random or cluster sample

Calculation of sample size:
\[ p=10-15\%; \ r = 4\% \]

- Sample unit = children 0 to 5 years
- Measurements, data collected:
  Weight (except ch. with edema),
  Height, Age, bilateral edema

Optional: retrospective (2 weeks) morbidity
Surveys (Cont.)

Decision chart for implementation of selective feeding programmes
(see page 75 “The management of Nutrition in major Emergencies, WHO, 2000”)

Criteria used for decision

• Prevalence of severe wasting (W/H<\(-3\)Zscore) + kwashiorkor

• Aggravating factors:
  CMR>1/10,000/day; epidemic of measles, whooping cough; high incidence of respiratory diseases
Implementation of selective programmes

- P<10%, no AG: acceptable situation
- P 10-14%, no AG or P 5 –9%, AG: Risky situation – Supplementary and Therapeutic Feeding Programme
- P>15%, no AG or P 10 – 14%, AG: Serious situation (SFP, TFP and general food distribution)