Course 4: FOOD BY PRESCRIPTION (FBP)

(1) :3 hrs

E: FBP Job Aid

- : Power point handouts
- ***** Case studies: FBP
- C: FBP protocol

Overview

- Definitions
- Requirements for FBP
- FBP protocol for the management of under nutrition
- Decision matrix

Objective

- To prevent loss of weight and lean body mass and enhance recovery from under nutrition through:
 - effective nutrition education and counseling
 - the prescription of food supplements (RUTF, FBF) and
 - Prevention of OI of the digestive tract through use of Safe Water Treatment Solutions (SWS) (chemical disinfectants)

Definitions

- Food by prescription
 - A nutrient based intervention that enables health service providers to assess the nutrition risk of patients through individualized therapy and follow up
- Nutrition therapy
 - defined as administration of food and fluids to support metabolic processes of a patient who is malnourished or at risk of becoming malnourished

Food and Nutrient Formulations

- Differ in the degree of processing and target nutrient composition & density per unit weight – key ones are
- Partially Cooked Foods Fortified Blended Flours - FBF (mainly used as Supplemental foods)
- Ready to Use Supplemental Foods Pastes that ready to eat – RUSF.
- Ready to Use Therapeutic Foods Pastes or Milks and bars of high nutrient density (RUTF)

Fortified blended flours

- FBF consist of a mixture of cereals, pulses, fats, vitamins, and minerals intended to provide a balanced intake of essential nutrients for vulnerable groups.
- The original FBF consist of corn soy blend (CSB). However, other types of FBF exist based on sorghum and soy, bulgur, wheat and soy, or combinations of cereals with heat treated soy in its full fat form or as defatted flour

Nutritional quality of FBF

- The nutritional quality of FBF is improved through the addition of soy, and the product is fortified with essential micronutrients.
- Because they are precooked and distributed as flour, they require only limited amounts of fuel for cooking and are simple to prepare and microbiologically safe.
- Furthermore, they can be produced relatively inexpensively.

Why FBF and not composite flours?

- The ingredients (cereals and legumes) are heat treated before milling to improve digestibility and to reduce levels of antinutrients and cooking times.
- The FBF is fortified with a vitamin and mineral mix.

Ready to Use Therapeutic food

- Plumpy'nut[®] is especially designed for home treatment of severe malnutrition
- The product Plumpy'nut[®] is a Ready-to-Use Therapeutic Food, of a nutritional value similar to F-100 therapeutic milk.



Ready to Use Therapeutic Food

- Therapeutic foods mainly intended for the treatment of severe under nutrition
- F-100
 - consists of 42% milk powder (SMP), equivalent to 11% of energy from proteins.
- RUTF nutritional composition quite close to that of the F-100 therapeutic milk, but the major difference is F-100 is given as a milk with an energy density of ;1 kcal/g (4.2 kJ/1 g), whereas
- RUTF is fat-based pastes with a very low water content and an energy density that is ;5 times as high [5 kcal/g (21 kJ/g)].

Use of food supplements

- F100 severe acute under nutrition *
- RUTF severe acute under nutrition
- RUSF moderate under nutrition
- FBF moderate and mild under nutrition

Requirements for FBP

- Diagnosis
- Intervention
- Assessment tools
- Monitoring and evaluation

Assessment tools

anthropometric equipment

- Height meter rule
- Weighing scale
- Length mat
- Infant scale
- Or height weight combo scale
- Child MUAC tape
- Adults MUAC tape
- Client history
 - Diet history
 - Opportunistic Infections

Diagnosis

- Health service providers trained on FBP
- Food by prescription protocol
- WHO BMI for Age charts
- WHO Weight for Height charts
- BMI adult chart
- MUAC summary chart

Intervention

- Safe water systems (SWS)
- Fortified blended flours
- Therapeutic products
- Nutrition education and counseling materials
- Storage facility

Monitoring and evaluation

- Health service provider in charge of data management
- Data collection tools
- nutrition register
- follow up plan

FBP Protocol

Structure of the protocol

- 1. Age group
- 2. Assessment
- 3. Diagnosis
- 4. Intervention
- 5. Monitoring and evaluation (Follow up)

Client Grouping

- 1. 6 23 months
- 2. 24 59 months
- 3. 5 9 years
- 4. 10 17 years
- 5. Adults 18 years and above
- 6. Pregnant mothers
- 7. Postpartum mothers

Food by Prescription protocol

Nutrition care process steps

- Nutrition assessment
- Nutrition diagnosis
- Nutrition intervention
- Nutrition monitoring and evaluation

OVC 6 – 23 months

Nutrition care process	Classification of undernutrition						
step	Severe	Moderate / mild					
Nutrition Assessment	 Signs of severe wasting loss of muscle bulk sagging buttocks Check for presence of edema on both feet No severe edema Check height or weight Check for medical complications Conduct appetite test 	 Check height or weight No medical complications Conduct appetite test 					
Nutrition Diagnosis	 Signs of severe visible wasting Bilateral pitting Oedema (+) Weight-for-height less than -3 z-scores or, Less than 70% W/H or, MUAC less than 11.5 cm and Passed appetite test 	 Weight-for-height greater than – 3 and less than – 2 z scores MUAC between 11 – 12 cm Eligibility for FBP is less than - 2 Weight for Height 					
Nutrition intervention	 (transition and Phase II) Nutrition counseling Provide 200 Kcal/ Kg Body Wgt. /day RUTF 37g/kg body Wgt/per day of RUTF i.e., (21 – 28 sachets per wk) One bottle (150 ml) of SWS*per month 	 Nutrition counseling Provide 100 grams First food per day i.e. 1 bag per month One bottle (150 ml) SWS* per month 					
Nutrition monitoring and evaluation	 Check weight weekly, weight for height equal to or above -2 Z scores, or MUAC > 11.5 cms, or no edema for 10 days and passed appetite test Discontinue RUTF if weight for height equal to or above -2 Z scores and start on FBF (First food) 	 Check weight monthly and height every three months Discharge from program if weight for height is to equal or greater than – 1.0 Z score 					

OVC 24 – 59 months

Nutrition care process	Classification o	fundernutrition
step	Severe	Moderate / mild
Nutrition Assessment	 Signs of severe wasting loss of muscle bulk sagging buttocks Check for presence of edema on both feet No severe edema Check height or weight Check for medical complications Conduct appetite test 	 Check height or weight No medical complications Conduct appetite test
Nutrition Diagnosis Nutrition intervention	 Signs of severe visible wasting Bilateral pitting Oedema (+) Weight-for-height less than -3 z- scores or, Less than 70% W/H or, MUAC less than 11.5 cm, and Passed appetite test (<i>transition and Phase II</i>) Nutrition counseling Provide 200 Kcal/ Kg Body Wgt. /day RUTF 37g/kg body Wgt/per day of RUTF i.e., (35 – 42 sachets per wk) One bottle (150 ml) of SWS*per 	 Weight-for-height greater than – 3 and less than – 2 z scores or, MUAC between 11 – 12 cm Eligibility for FBP is less than - 2 Weight for Height Nutrition counseling Provide 200 grams First food per day i.e. 2 bags per month One bottle (150 ml) SWS* per month
Nutrition monitoring and evaluation	 month Check weight weekly, weight for height equal to or above -1 Z scores, or, or MUAC > 11cms, or no edema for 10 days and passed appetite test Discontinue RUTF if weight for height equal to or above -2 Z scores and start on FBF (First food) 	 Check weight monthly and height every three months Discharge from program if weight for height is to equal or greater than - 1.0 Z score

OVC 5 – 9 years

Nutrition care process	Classification of undernutrition						
step	Severe	Moderate / mild					
Nutrition Assessment	 Signs of severe wasting loss of muscle bulk sagging buttocks Check for presence of edema on both feet No severe edema Check height or weight Check for medical complications Conduct appetite test 	 Check height and weight No medical complications Conduct appetite test 					
Nutrition Diagnosis	 Signs of severe visible wasting Bilateral pitting Oedema (+) BMI for Age less than -3 z-scores or, MUAC less than 13.5 cm and, Passed appetite test 	 BMI for Age greater than – 3 and less than – 2 z scores MUAC between 11 – 12 cm Eligibility for FBP is BMI for Age less than - 2 Z score 					
Nutrition intervention	 (transition and Phase II) Nutrition counseling Provide 200 Kcal/ Kg Body Wgt. /day RUTF 279gms per day of RUTF i.e., (21 sachets per wk) 100 grams per day FBF (First food) i.e., 1 bag per month One bottle (150 ml) of SWS*per month 	 Nutrition counseling Provide 200 grams First food per day i.e. 2 bags per month One bottle (150 ml) SWS* per month 					
Nutrition monitoring and evaluation	 Check weight weekly, BMI for Age equal to or above -2 Z scores, or MUAC > 13.5 cm, or no edema for 10 days and passed appetite test Discontinue RUTF if BMI for age is equal to or above -3 Z scores and continue on FBF (First food) 	 Check weight monthly and height every three months Discharge from program if BMI for Age is to equal or greater than – 1.0 Z score 					

OVC 10 – 17 years

Nutrition care process	Classification of undernutrition						
step	Severe	Moderate / mild					
Nutrition Assessment	 Signs of severe wasting loss of muscle bulk sagging buttocks Check for presence of edema on both feet No severe edema Check height or weight Check for medical complications Conduct appetite test 	 Check height and weight No medical complications Conduct appetite test 					
Nutrition Diagnosis	 Signs of severe visible wasting Bilateral pitting Oedema (+) BMI for Age less than -3 z-scores or, MUAC less than 16 cm and Passed appetite test 	 BMI for Age greater than - 3 and less than - 2 z scores or, MUAC between 16 - 18.5 cm Eligibility for FBP is BMI for Age less than - 2 Z score 					
Nutrition intervention	 (transition and Phase II) Nutrition counseling Provide 200 Kcal/ Kg Body Wgt. /day RUTF 279gms per day of RUTF i.e., (21 sachets per wk) 300 grams per day FBF (Foundation plus) i.e., 2 bag per month One bottle (150 ml) of SWS*per month 	 Nutrition counseling Provide 300 grams Foundation plus per day i.e. 2 bags per month One bottle (150 ml) SWS* per month 					
Nutrition monitoring and evaluation	 Check weight weekly, BMI for Age equal to or above -2 Z scores, or MUAC > 16 cm, or no edema for 10 days and passed appetite test Discontinue RUTF if BMI for age is equal to or above -3 Z scores and continue on FBF (Foundation plus) 	 Check weight monthly and height every three months Discharge from program if BMI for Age is to equal or greater than – 1.0 Z score 					

Adults 18 years and above

Nutrition care process	Classification of undernutrition						
step	Severe	Moderate / mild					
Nutrition Assessment	 Signs of severe wasting loss of muscle bulk sagging buttocks Check for presence of edema on both feet No severe edema Check height or weight Check for medical complications Conduct appetite test 	 Check height and weight No medical complications Conduct appetite test 					
Nutrition Diagnosis Nutrition intervention	 HIV positive Signs of severe visible wasting Bilateral pitting Oedema (+) BMI less than 16 kg/m² MUAC less than 16 cm Passed appetite test (<i>transition and Phase II</i>) Nutrition counseling Provide 200 Kcal/ Kg Body Wgt. /day RUTF 279gms per day of RUTF i.e., (21 sachets per wk) 300 grams per day FBF (Foundation plus) i.e., 2 bag per month One bottle (150 ml) of SWS*per month 	 HIV positive BMI greater than 16 and less than 18.5 kg/m² MUAC between 16 – 18.5 cm Eligibility for FBP is BMI less than 18.5 Nutrition counseling Provide 300 grams Foundation plus per day i.e. 2 bags per month One bottle (150 ml) SWS* per month 					
Nutrition monitoring and evaluation	 Check weight weekly, BMI equal to or above 16 kg/m², or MUAC > 16 cm, or no edema for 10 days and passed appetite test Discontinue RUTF if BMI is equal to or above 16 kg/m² and continue on FBF (Foundation plus) 	 Check weight monthly and height every three months Discharge from program if BMI is to equal or greater than 20 kg/m² 					

Pregnant and post partum mothers

Nutrition care	Classification	of undernutrition				
process step	Severe	Moderate / mild				
Nutrition Assessment	 Signs of severe wasting loss of muscle bulk sagging buttocks Check for presence of edema on both feet No severe edema Check height or weight Check for medical complications Conduct appetite test 	 Check height and weight No medical complications Conduct appetite test 				
Nutrition Diagnosis	 HIV positive Signs of severe visible wasting Bilateral pitting Oedema (+) MUAC less than 22 cm Passed appetite test 	 HIV positive MUAC between 22 – 24 cm <u>If pregnant</u>: a. With low weight gain of < 1.5 kg/month <u>If post partum</u>: a. With non intentional weight loss of > 0.7 kg/ month b. With weight loss and low BMI i.e. < 20 				
Nutrition intervention	 (transition and Phase II) Nutrition and infant feeding counseling Provide 200 Kcal/ Kg Body Wgt. /day RUTF 279gms per day of RUTF i.e., (21 sachets per wk) 300 grams per day FBF (Advantage) i.e., 2 bags per month One bottle (150 ml) of SWS*per month 	 Nutrition and infant feeding counseling Provide 300 grams Advantage per day i.e. 2 bags per month One bottle (150 ml) SWS* per month 				
Nutrition monitoring and evaluation	 Check weight weekly, MUAC greater than or equal to 22 cm or no edema for 10 days and passed appetite test Discontinue RUTF for: <i>Pregnant mothers when there is an</i> observed weight gain of greater than 1 kg per month. For post partum mothers an observed steady weight gain after 6 weeks and BMI > or = 20 and continue on FBF (Advantage) 	 Check weight monthly and height every three months Discharge from program if MUAC is to equal or greater than 24 cm 				

Energy requirements

	HIV negative		HIV Positive ¹						
Group of people	Energy requirement (kcal/day)		nptomatic irement (kcal/da	Sympto Energy re (kcal)	Proteins requirement (g/day)				
		10% extra Energy		20% - 30% extra	Energy				
Adults									
Male (Light activity)	2580	260	2840	520 - 780	3100-3360	57			
Male (Moderate activity)	2780	280	3060	560 - 840	3340-3620	57			
Female (Light activity)	1990	200 2190		400 - 600	2390-2590	48			
Female (Moderate activity)	2240	220 2460		440 - 660	2680-2900	48			
Pregnant women	2280 (290 extra)	230 2510		500 - 750	2780-3030	55			
Lactating women	2490 (500 extra)	250 2740		540 - 810	3030-3300	68			
Children ²				20% extra					
Boys									
6-11 months	760-970	80-100	840-1070	150 - 190	910-1160	10			
1-3 years	1200-1410	120-140	1320-1550	240 - 280	1440-1690	25			
2-5 years	1410-1690	140-170	1550-1860	280 - 340	1690-2030	26			
5-10 years	1810-2150	180-220	1990-2370	362 - 430	2170-2580	35			
10-14 years	2500-2800	250-280	2750-3080	500 - 560	3000-3360	64			
15-18 years	3000-3100	300-310	3300-3410	600 - 620	3600-3720	84			

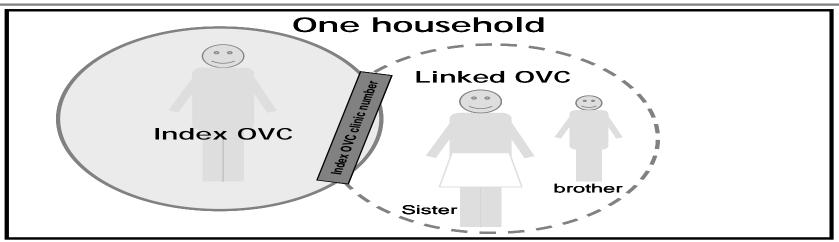
RUTF + FBF?

- Adult (male moderate activity) requires between 3,100 – 3300 Kcal/ day
- RUTF + FBF= ?
- RUTF dose for adults (300g/day i.e. 1,500 Kcal)
- FBF dose for adults (300 g/day i.e. 1,350)
- Therefore, total energy from combination dose = (1,500 + 1,350)kcal/day
- Total energy = 2,850 Kcal/ day

Summary protocol

• See handout

Linking OVCs



Who is an OVC in the context of HIV and FBP?

An orphan is a child <18 years of age who has lost one or two parents due to HIV. A vulnerable child is a HIV infected child or one whose primary caregiver is living with HIV. OVCs are enrolled in the FBP program if undernourished or linked OVCs due to household food insecurity/risk of under-nutrition.

Who is an Index OVC?

- a. Is orphaned/vulnerable (see above)
- b. Is undernourished (see entry criteria)
- c. Is enrolled in facility and has an assigned number

Who and why linked OVCs?

- a. Siblings of the index OVC living in the same household as the index OVC
- b. They are likely to share prescribed FBF with index OVC
- c. They are linked to minimize sharing and hasten recovery time for index OVC

How to link OVCs

- a. Evaluate food security situation in the household and risk of under-nutrition
- b. Assess the siblings' nutrition status for risk of under-nutrition
- c. Enrol other sibling(s)/OVCs from the household and prescribe FBF only
- d. For each OVC fill a form and record other details (i.e. age, sex, height, weight) and the FBF prescribed
- e. In the enrolment/prescription form for linked OVCs, record the number of index OVC e.g. p12345 in the space provided *(see illustration below)*

Index OVC ? Y N If 'No' Patient number of Index OVC: P12345

- f. Discharge the linked OVC at the same time the index OVC is discharged
- g. No FBF is prescribed during discharge

Reference material: FBP charts, protocol, & job aid

Decision matrix

- 1. Take anthropometric measurements
- 2. Conduct a causal assessment
- 3. Determine treatment
- 4. follow up and assessment plan

Step 1: Anthropometric measurements

- a. Minimum data set (accurate height and weight)
- b. Classify using charts
- c. Record

Severely undernourished patients refer to health facility for special care

Step 2 : conduct causal assessment

- Patient review
- Health status
- Food consumption practices

Step 3: Determine treatment

- Nutrition counseling
- "All severely undernourished patients should receive RUTF, however, in cases where grade II anemia is present the patient is referred for in patient care"
- "All moderately undernourished patients should receive fortified blended flours (FBF) and safe water solution)"

Step 4 : Follow up and assessment plan

The follow up plan for each patient should be <u>targeted</u> and <u>time bound</u>, that is, if there is no sign of improvement and successful treatment after the first two months, then there is need for <u>investigation for underlying</u> <u>causes</u> of non performance

Common Mistakes/Oversights

- FBP admission criteria: Guideline for admission of clients NOT fully observed in 10-20% of enrolled clients e.g. BMI > 18.5 kg/m2; MUAC data for PPP clients missing kabisa.
- **FBP discharge criteria:** Over-retention; Guideline on discharge eg BMI cut-off point > 20 kg/m^2 NOT respected.
- **Reporting discharge of clients:** Discharge forms for Graduated or Lost-to-follow-up Clients are either not promptly filled or not filled at all.
- **Completeness of data:** Many admission forms have incomplete client data which makes comprehensive reporting difficult

Case studies

• Case study 1,2,3,4 and 5

Structure of the answers

- Assessment
- Diagnosis (PES statements)
- Intervention
- Follow up

Course 5 : Commodity management

Solution 1 hr
FBP Job Aid
Power point handouts
Case studies: commodity management
MCR, DCR

Objectives

- To strengthen Nutrition care commodity management and control the flow of commodities from supplier to delivery points through:
 - Optimizing the pull system for commodities used for nutrition care
 - improving storage practices for commodities
 - enhancing tracking of FBP commodities (strengthening use of Daily and Monthly Consumption Reports)

Content overview

- Definitions
- Overview of inventory control
- Ordering, receipt and storage procedures
- Inventory control tools

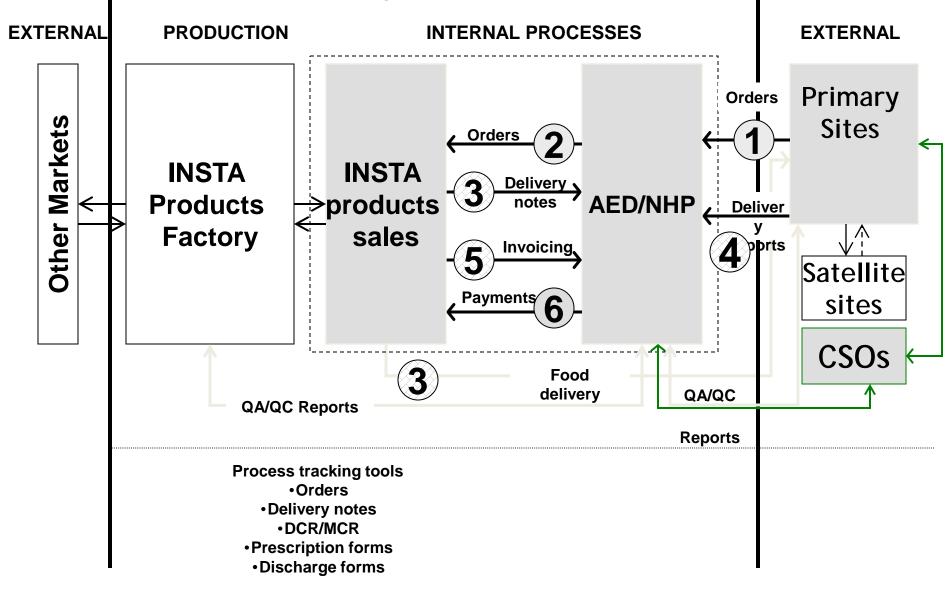
Definitions

- Pull System: Manufacturing/Supply system in which production is based on actual Consumer demand, and where information flows from market to management (*Demand Driven - Optimal*)
- 2. Push System: Manufacturing/Supply system in which production is based on a Projected Production plan and where information flows from management to the market, the same direction in which the materials flow. (*Supplier Driven -Problematic*)

Definitions

- **3. Commodities** herein refer to the following: point of use water disinfectant, therapeutic and supplemental foods.
- 4. Safety / buffer stock: Inventory held as buffer against mismatch between forecasted and actual consumption or demand, between expected and actual delivery time, and unforeseen emergencies. Also called reserve inventory
- 5. Pipeline (in transit) inventory : commodities that are in the process of being moved from a point of supply to the point of demand
- 6. Inventory Control: refers to the supervision of the supply and storage and accessibility of items in order to insure an adequate supply without excessive oversupply

Inventory control process



Storage

- The main causes of spoilage of stored foods are as follows:
 - Contamination by rodents, birds, insects and micro-organisms
 - Contamination by dust or foreign bodies
 - Incorrect storage conditions such as exposure to <u>sunlight, heat and moisture</u>
 - Enzyme activity leading to development of rancidity or browning

Optimal Store for Supplemental and Therapeutic Foods

- Structure of the roof, walls, floor and space
 - Prevent entry of insects, rodents and birds
 - Easy to clean
 - Good ventilation to maintain cool dry environment
 - Adequate pallets or shelves for holding food packages
 - Well arranged to allow for First in First out practice (FIFO).
 - Frequently fumigated to avoid infestation
- **Doors and Locks** the store MUST be secure to avoid theft/losses.

Serial No:

FBP DAILY CONSUMPTION REPORT (DCR)

SITE	:	N	lonth:	mm	2	0 <i>yy</i> :	y y	J		
	DATES	FIRST FOOD®	FOUND		+®			GE ®	RUTF (satchets)	WATERGUARD®
	[A] BALANCE b/f (from previous month)									
1.										
2.										
3.										
4.										
5.										
6.										
7.										
8.										
9.										
10.										
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27.										
28.										
29.										
30.										
31.										
	[B] CONSUMED									
SI	[C] BALANCE=A-B									
TOTALS	[D] RECEIVED									
	[E] DAMAGED									
	[F] EXPIRED									
	[G] BAL F/WD (C+D)-(E+F)									
сом	MENTS:								1	•

PREPARED BY: dispensing officer - ([]nutritionist, []nurse, []pharmacist) Name: ______ Date:

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Date:

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MINISTRY OF MEDICAL SERVICES

FBP MONTHLY CONSUMPTION REPORT (MCR)

SITE:								
	Α	В	С	D	E	F	G	Η
PRODUCT TYPE	PATIENTS (this month)	CONSUMPTION (quantity)	EXPIRING* (quantity)	DAMAGED (quantity)	AMT. SENT to SATELLITE(S)	TOTALS (B+C+D+E)	BALANCE** (Balance f/wd-F)	ORDERS‡ (quantity)
FIRST FOOD® (Bags)								
FOUNDATION PLUS® (Bags)								
ADVANTAGE® (Bags)								
RUTF (Sachets)								
WATERGUARD® (Bottles)								

INSTRUCTIONS

* Expiry: Report amount of products where expiry date is in the next 2 months and likely to go to waste

** Balance: This is the remainder after subtracting amount sent to satellite(s) from the balance to be carried forward (row "G" from the DCR).

t Orders: should be submitted as need arises - give a two (2) weeks lead time

Quantity: For all foods apart from RUTF and WaterGuard®, quantity is in bags. Quantity for RUTF is sachets, and bottles for WaterGuard®

1 bag of any of the following products (First Food, Foundation Plus or Advantage) is allowed for demonstrations, please indicate in the comments section below

COMMENTS

PREPARED BY: dispensing officer - ([]nutritionist; []nurse; []pharmacist)

Name:	

Signature: