

Using Supplementary Feeding to Coordinate and Monitor Essential
Health Services: The Nutrition-Centered Health Concept

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INTRODUCTION

The term "nutrition-centered health" refers to a refugee health management technique of providing comprehensive and centralized feeding and health services to refugees and displaced persons as well as using supplementary feeding programs as a means of monitoring refugee camp health and nutrition conditions. In general, the approach can be used in any situation where people live in camps or dense settlements and are supplied wholly or in large part by relief agencies. The system works well in both urban and rural environments and in any type of climate. Most important, the technique is an ideal method for delivering a full range of health services to vulnerable groups (children under five and pregnant or lactating women.)

A complete NCH program contains the following components:

1. an initial nutrition-centered assessment (see chapter 1);
2. therapeutic (intensive) feeding for severely malnourished persons;
3. supplemental feeding for vulnerable groups. Supplemental feeding includes registration and record keeping, immunizations against communicable diseases, supervised feeding of special easy-to-eat, high protein and high calorie meals, growth and weight monitoring, health education for mothers (see chapter 2);
4. provision of a balanced diet (called a "food basket") to the entire refugee population;
5. epidemiologic surveillance carried out by monitoring the records kept by the supplemental feeding program;
6. monitoring of the food, water, and hygiene aspects of the camp by monitoring the morbidity and mortality information collected at the feeding centers (and other health facilities serving the refugee population).

1. NCH ASSESSMENT

Nutrition-centered health assessment (NCH Assessment) is the use of specialized relief feeding programs as the "point of contact" for assessing and monitoring the full range of health problems. The method includes two sets of activities; an initial assessment of health and nutritional status and long term surveillance of malnutrition, disease and water quality. The method also provides data useful for monitoring of food supplies, logistics, water purity, and food quality.

Methodology

An NCH assessment focuses on the nutritional status of the disaster victims. If the people are in generally good condition and their health and nutritional status is near normal (as determined by certain indicators and standards) the emphasis of the assessment can then focus on programmatic issues and cost efficiency considerations. If however, malnutrition is widespread and death rates are high, the assessment focuses on the delivery of foods and health services and on emergency relief (lifesaving) measures.

A beginning point of NCH assessment is an examination of the health status of "vulnerable groups". Vulnerable groups include children under five years of age, pregnant and lactating women and certain other high risk groups. An analysis of the condition of these people is important because:

- Their needs for food and nutrition are higher than for other groups in the displaced or refugee populations.
- They are less able to provide themselves - young children are dependent upon their mothers in order to survive and women with dependent children are less able to leave the home to work.
- Deaths and illness affect these groups first; thus, their health and nutrition status is considered to be a reliable indicator and an "early warning" of problems affecting the entire population.
- Not only are young children at risk from disease, they are unfortunately subject to cruel decisions that must be made by their families for survival. In a society where families are large and fertility rates are high, parents are often forced to make decisions regarding survivability. In refugee situations, families preferentially support working age males and children who have reached five years of age, an age where their chances of survival are statistically much greater and an age where they can begin to share in productive family activities such as taking care of younger children and participating in the families' efforts to obtain a livelihood.

Step 1

To determine the status of vulnerable groups, an analysis is made of nutritional status, mortality (live birth rates and deaths), and morbidity (the incidence of disease). A standard survey technique has been developed to rapidly assess the status of vulnerable groups. First the arm circumference

of all children under five in randomly selected families is measured. (See page 95, de Ville). Arm circumference is a recognized technique used for rapid assessment. Although this method is limited and more accurate height-for-weight measuring procedures should be used to verify the assessment, rates of severe malnutrition can be estimated using arm circumference surveys.

Step 2

Second, a brief questionnaire (appendix I) on family health history is used to develop data about mortality, morbidity and to note diarrhea. Mortality and disease are epidemiological indicators that reflect both health and socio-economic status. Diarrhea may indicate problems in the type of food people are eating or deficiencies in water, sanitation and personal hygiene. The number of families surveyed can be relatively small, usually no more than 20-30 surveys.

Step 3

Interviews with senior health and administrative personnel to collect data about the overall population as well as reported and diagnosed cases of disease and to determine the total number of deaths and the causes of death. Sample interview questionnaires are shown in appendix II.

Step 4

Next, water supply, sanitation, general hygiene evaluation. Of special interest are water quality and quantity; type, availability and average use of sanitary facilities (latrines); water portage and storage hygiene of the families; food storage and preparation hygiene; and personal hygiene and cleaning routines. Contamination anywhere in this "hygiene loop" can cause diarrhea, which will in turn affect health and nutritional status.

Step 5

Food supplies and consumption levels are then assessed. When food supplies reaching the affected population are adequate, problems of diarrhea and disease become the highest priority. If the food supplies are inadequate in quality or quantity they become the focal point of concern. Appendix provides a checklist examining deficiencies in food supply.

Together this information can present a very accurate picture of health and nutritional status and the likelihood that certain diseases may occur.

Monitoring (Surveillance)

The long-term monitoring component of the NCH program is the systematic recording of health and nutrition information at the Supplemental Feeding Centers and periodic examination of the records by trained health workers. Various problems in the population at large can be detected by interpreting the information about what is happening to the vulnerable groups. The supplemental feeding center is the point of contact for this data collection because during the emergency period and well into the maintenance phase, all persons in the vulnerable group should be receiving supplemental feeding, by registering and monitoring growth and health information, any health or nutrition problems that occur in the population at large can be quickly detected and addressed.

Sample forms for monitoring and disease surveillance in the supplemental feeding program are attached in Appendix III.

Summary

The advantages of the NCH approach are numerous. Among them are:

1. Comprehensive health and nutrition services can be provided to the target population.
2. A constant check on the situation can be maintained (even daily if necessary).
3. Since vulnerable groups reflect what is happening in the whole population, the need for wider surveillance is greatly reduced.
4. The feeding programs and the registration and weighing activities do not require a large staff. Several nurses assisted by the disaster victims themselves can carry out the entire program and periodic checking by an epidemiologist or other trained health professionals can handle all the detection and response activities.
5. Only minimal equipment is needed. Arm circumference tapes are cheap to purchase and can easily be made locally. For more accurate and long-term monitoring, simple Salter scales are normally used. These are available from a number of sources and only a few are needed in each feeding center. A small diagnostic lab can analyze reports from many different centers to detect and monitor infectious disease.
6. Nutritional status is an excellent indicator of other potential health problems and when malnutrition or diarrhea is detected in the NCH program, there is an automatic trigger for remedial activities.
7. The feeding component of the NCH program provides an excellent means of providing redundancy in the feeding program. If the supply lines for the supplemental feeding are operated independently from the milk ration, food defects in one can be remedied in part by the other.

2. HOW TO ORGANIZE SUPPLEMENTARY FEEDING FOR AN NCH PROGRAM

A. INTRODUCTION

This lesson is intended to assist those involved in the planning, implementation and supervision of Supplementary Feeding Programmes, (SFP) in refugee camps.

An SFP should be seen as both a nutrition program for vulnerable groups as well as a part of the preventive health program. To be effective, it requires competent management and good cooperation between organizers, agencies, medical personnel and leaders of the refugee population.

In order to facilitate refugees' transition back to their normal way of life, an SFP must utilize foods which are familiar to the population in addition to improving nutritional status.

A Feeding Program Coordinator should be designated in each camp to liaise between the different feeding centers to ensure that there is consistency in standards and procedure in all Supplementary Feeding Centers.

Regular meetings should be held to exchange information and to ensure good cooperation between all those involved.

B. STANDARDS

1. The objectives of an SFP are:

- a) To prevent deterioration of vulnerable groups by providing the extra nutrients needed for growth and lactating mothers' milk production.
- b) "On-the-spot" feeding of an additional meal to ensure that the right food reached only the selected group.
- c) To aid recovery from disease.
- d) To educate the refugee population as to better nutrition practices.

2. The beneficiaries of SFPs in the camps should be:

- a) Children 5 years of age and under;
- b) Pregnant and lactating women;
- c) Malnourished individuals (any age);
- d) Selected medical cases.

Note: School Feeding Programs

It is recognized that school-age children (6-13 years) in these populations may be nutritionally deficient. Therefore, where resources and local circumstances permit, a feeding programme should be created to become an integral part of any school program set up for refugee populations. This will be based on the nutritional and management principles included in this paper. Coordination of school feeding with supplementary feeding programs within each camp should be arranged by the feeding program coordinator.

3. The recommended method of feeding in SFPs involves:

"On-the-spot" consumption of cooked food in the SFP center under the supervision of trained personnel. Alternative strategies for on-the-spot consumption may be explored on the advice of the feeding programme coordinator.

4. Meal Composition

- a) The meals must be adapted to the food habits of the refugee population. Only foods, recipes and locally available produce, familiar to the refugees will be used, except under the circumstances outlined in (c) below.
- b) Fresh fruit and/or vegetables should ideally be provided daily, where feasible.
- c) Special cereal-based foods may be used for the supplementary feeding program. (See Annex 1.)
- d) Dried skimmed milk and other milk products should ideally be used as ingredients in cooked meals. (See Annex 2 for a full discussion of the issues related to the use of milk powder as a food for vulnerable groups).
- e) A drink should be provided to satisfy thirst, e.g. safe water, fruit juice, tea, etc.

5. Nutrient Content of SFP Meals

- a) Foods are selected for their particular nutritional value. An appropriate ration is, for example:
 - 40 g dry skim milk (160kcal) plus
50 g cereal-based special food (Annex) or rolled oats
(200 kcal)
or
 - 100 g rolled oats or cereal-based special food (400 kcal)
or
 - 40 g dry skim milk plus 20 g oil (total: 340 kcal).
- b) As a guideline, around 350 kcal and 15 g protein constitutes a usual portion in a relief programme.
- c) The fat content of the meal should be not less than 20% to achieve a high-energy density. Note: small children have a small gastric capacity which limits the volume of food they can eat at any one time. For this reason, the aim is to provide the maximum amount of energy and protein in the smallest bulk possible. In this respect, dried, full-cream milk powder is more useful than dried skimmed milk due to the fat content of the former.

6. Feeding of Small Children

- a) Breast feeding should be encouraged, with particular attention paid to lactating mothers and their infants. Note: bottle feeding in developing countries has been associated with infant mortality.
- b) BOTTLE FEEDING SHOULD NOT BE ALLOWED UNDER ANY CIRCUMSTANCES. The advice of the pediatric/nutrition staff can be provided if necessary. A cup and spoon, maintained in hygienic condition, will be used when milk is given in liquid form as one of the supplementary foods.
- c) Rations for night feeds should only be distributed under medical supervision.

7. Food Preparation

The area for food preparation must be kept hygienic. This will be the responsibility of a designated supervisor.

8. Food Distribution

Congestion at mealtimes can be avoided by dividing the beneficiaries into groups or categories who attend feeding at different times of the day.

- a) Each beneficiary must be able to sit in an adequate space to eat his meal.
- b) Each beneficiary should be allowed to satisfy his immediate appetite at each meal.
- c) Those with poor appetites should be closely supervised and encouraged to eat as much as possible (small children require particular attention, with help, where possible, from their own mothers).
- d) Generally, each beneficiary receives one meal per day. Selected cases may be given 2 or more meals per day.
- e) Feeding will be conducted on a daily basis.

9. Staffing and Supervision of SFP Personnel

- a) A plan for the staffing of the SFP should be developed by the agency responsible for the feeding program and approved by the nutrition coordinator.
- b) The training and supervision of refugees working in the feeding center is the responsibility of the agency working in the SFP.
- c) Where necessary, a translator should be assigned to each center to allow communication with expatriate personnel.
- d) If several feeding centers will be established in a camp, one "model" center should be used for staff training.

10. The facilities required for SFP are:

- a) An enclosed area designated as the feeding site. Where large numbers of beneficiaries are to be fed, facilities should include separate entrance and exit.
- b) A sheltered area where people can sit to eat.
- c) A kitchen with stoves, fuel and necessary utensils.
- d) A reliable water supply with drainage system.
- e) A garbage disposal system.
- f) A secure food store with hard surface floor.
- g) A reliable food supply system.
- h) A designated area for an advisory room.

11. The location and size of the SFP site

This must be chosen according to the lay-out of the camp with the precise "catchment area" clearly defined. Ideally, it should be:

- a) Close to an outpatient clinic to facilitate cooperation between the two services.
- b) Cater for not more than 3,000 beneficiaries.

12. Registration of beneficiaries

New admissions should be advised to attend at a certain time for registration and individual advice.

A registration book should be kept in each center. This book is used to record the following information for each beneficiary:

- a) A registration number.
- b) Name, age and sex.
- c) Date of admission to the programme.
- d) Category (e.g. under 6 years, pregnant, etc.)
- e) Referred or not? (e.g. from clinic, etc.)
- f) Group leader or household number (if available to facilitate home visits).

13. Individual ration cards

In the SFP system, ration cards are required (see Fig. 2-1).

SUPPLEMENTARY FEEDING CARD

The point of checking is not to prevent children from being served twice, but to ascertain their regular attendance at meals.

Children should have individual cards and be listed in a register by camp sector, so that helpers can easily find them if they fail to show up. As children in this category are normally taken to meals by their mothers or elder sisters or brothers, their cards should suffer less in handling. It is useful to have a combined card for feeding and follow-up.

14. Preventive Health Program

The preventive health program will develop gradually with emphasis on particular aspects according to the needs in each camp. These guidelines indicate the scope of such a program.

The SFP is intended to be the focal point of the preventive health program run in close collaboration with other health activities. Any agency involved in an SFP should provide the necessary medical personnel or collaborate closely with another agency in the provision of this service.

Volunteer refugee workers should play a major role in every aspect of this program, and training schemes for extension workers should be initiated as soon as possible.

- a) Home visiting (outreach): every household in the SFP catchment area should be visited to refer beneficiaries to the feeding center. Follow-up visits should be made at regular intervals, particularly where domestic problems have been found. Where a beneficiary has been absent from feeding for 2 consecutive days (NB use of daily attendance register) a follow-up home visit should be made.
- b) "Under 5s clinic": Health cards should be used to record the progress of each child. Explanations must be given to all mothers on the purpose and value of the cards.

i. Nutritional surveillance will be carried out through the regular measurement of height and weight of the children 5 years of age and under. This information may, where necessary, be supplemented by, or substituted by, measurements of arm circumference. This information should be collected and maintained on suitable charts. (For a detailed discussion of nutritional surveillance methodologies, see Chapter 4, PAG, 1977; Chapter 3, de Ville de Goyet, et al., 1978; WHO, 1978.)

The orderly maintenance of nutritional surveillance data will be the responsibility of the Feeding Programme Coordinator in each camp.

ii. Immunization programs: Immunization programs should be undertaken in all camps. The designated authorities should issue a set of recommendations in the management of such programs, which should be carried out in complete cooperation with the camp medical coordinator.

- c) Advisory room: this facility should be arranged for those with particular problems, e.g. malnourished children or women with failure of lactation. This allows time for special attention and advice and extra meals if necessary.
- d) Assessment of progress of the malnourished: this entails the regular weighing of those classified as malnourished on admission to the program. This information must be recorded in the SFP register at 2-week intervals, and will be reviewed regularly by the nutrition coordinator.
- e) Public Health Education: regular, informal, health and nutrition education sessions for small groups of women should be organized. Discussions and practical demonstrations can cover a variety of topics (see Appendix I).
- f) Mass distribution of medicines such as vitamins, from preparations and de-worming agents should be distributed under the direction of the camp medical coordinator.

Note: Medical/nutrition authorities agree that any vitamin or mineral deficiency should be treated selectively. Multivitamin preparations do not contain enough of any vitamins to be useful in treatment of a vitamin deficiency syndrome. For this reason, the mass distribution of multivitamins is not recommended. Any decisions concerning the large scale distribution of specific vitamins (esp. Vit. A) will be made under guidance of the medical or feeding program coordinator in each camp.

15. The long-term need for SFP

This will be determined through a system of nutritional surveillance. A surveillance program of a regular systematic basis should include sample surveys of households, and other methods of NCH assessment. (The weighing and measuring of children in under 5s clinics is an integral part of the surveillance program.)

As conditions allow, the SFP facilities may be made available for other purposes.

C. ORGANIZATION

Organization for the management of the supplemental feeding program is as follows:

1. Camp Feeding Program Coordinators (FPC)

In each camp a feeding coordinator should be designated. The FPC in each camp is responsible for seeing that all feeding centers maintain a good standard of service. The FPC inspects the SFCs, their records, and their surveillance statistics.

2. Camp SFP Coordinating Committee

In larger camps, when 2 or more organizations are involved in the SFP, a coordinating committee will be established to coordinate activities and work out problems relating to the SFP, especially logistics, facilities, personnel and qualities of foods.

3. Lead Agencies

If several agencies are providing S.F. services at different sites in a camp, it is advisable to designate a lead agency in each of the camps to serve as the "model" agency for the delivery of services in that camp. All agencies in the camp offering supplementary feeding should duplicate the services, schedules and routines of the lead agency.

D. ROUTINES

1. Feeding Schedules

A daily schedule for SFPs in each camp should be developed by the camp FPC with the advice of the camp SFP coordinating committee. All operations within the same camp should be carried out on approximately the same schedule.

2. Surveillance

Each SFP should conduct the surveillance activities on a monthly basis. A monthly report should be compiled and forwarded to the FPC who will verify the reports, if necessary. The FPC should prepare a summary for the entire camp on an SFP Periodic Report Form.

3. COORDINATING OTHER HEALTH ACTIVITIES

Activities or programs which may be part of or linked to SFPs fall into 4 general categories:

- Evaluation of the overall feeding program
- Provision of maternal-child health services and/or other services to high risk groups
- Data collection for disease surveillance, growth monitoring or program evaluation
- Education activities

A. Evaluating the Feeding Program

In evaluating the overall feeding program, it is important to answer the following questions:

1. Evaluation of supplementary feeding:
 - a) is program coverage (registration) high?
 - b) is program participation high?
 - c) is program follow-up (of non-participants) high?
 - d) is program success (in terms of growth) high?
2. Evaluation of general feeding program ("food basket")
 - a) are unexpectedly high numbers of undernourished children present?
 - b) are specific deficiency diseases being reported/observed?

B. Provision of maternal-child health services or other services to high-risk groups:

If an SFP is meeting its goal of providing services to a high proportion of high-risk persons, particularly children, an opportunity exists to piggy-back other essential services onto the SFP and thereby more quickly and easily achieve high coverage of these other services. Such other services include (but are not limited to):

1. Immunization program(s): At regular intervals, appropriate vaccines can be provided to SFP recipients. The same card used by mothers for SFP registration can be used as an immunization record card.
2. Oral rehydration salts: SFPs can provide both ORS packets and education about diarrhea and ORS (see below) to mothers.
3. Antenatal Care: SFPs and antenatal care programs can work together to insure cross-referral and follow-up of specific problems. The SFP can be a site for a tetanus immunization program for pregnant women.
4. Persons with specific problems can be referred to:
 - a) advisory feeding program (usually part of SFP)
 - b) therapeutic feeding programs (see Chapter 5, de Ville)
 - c) inpatient or outpatient health facilities
5. Other programs as dictated by local conditions or disease control program needs.

C. Data Collection for Disease Surveillance and for Program Evaluation

An SFP which has achieved a high population coverage can provide a large proportion of the health and nutrition information needed for disease surveillance and program management. This information falls into several categories.

1. Nutrition Surveillance Data:
 - a) Growth Monitoring to insure that children are growing well.
 - b) Screening information - at program entry, to detect malnutrition among persons entering the population.
 - c) Monitoring the overall health and nutrition situation - malnutrition reported may indicate a problem with the SFP, the general feeding program or other aspects of the population's health (e.g. infant feeding bottles).
2. Census Data: SFP program data should complement and be used to cross-check other census data about the population.
3. Disease Surveillance: Data on ill children in or referred to SFP may indicate existence of a problem elsewhere in the health system (e.g. an excess of diarrhea cases).

D. Educational Activities

Because of the nature and target group(s) of an SFP, an opportunity and obligation exists to provide health and nutrition education either as part of the SFP or closely coordinated with it. These education activities fall into 3 broad categories:

1. Nutrition education
2. Health education
3. Training in SFP/Health activities

1. Nutrition Education

Several aspects of nutrition education are appropriate for inclusion in or coordination with SFP activities.

- a) weaning education
- b) support for breast feeding (problems)
- c) food chores and preparation

2. Health Education: Relevant topics include

- a) training in use of oral rehydration solutions and diarrhea treatment
- b) parasite control measures
- c) sanitation and water cleanliness education.

3. Training for SFP/Health Activities

Most tasks involved in running an SFP can be taught to and performed by members of the refugee population. These include:

- a) teaching aspects of nutrition - see D 1 above.
- b) food preparation and distribution
- c) growth monitoring
- d) tracing "no-show" registrants

Appendix V

ISSUES IN THE PROVISION OF MILK AS A NUTRIENT FOR INFANTS AND CHILDREN

Although milk has long been considered an ideal food in human nutrition, recent research has seriously challenged the use of milk powder in the Third World. Usage of milk or milk-based formulas in developing countries leads to a special set of problems. Although powdered cow's milk or milk-based formulas are acknowledged to be an easily transportable food with good protein and calorie density it has, in the refugee situation, certain disadvantages. A summary of the issues is as follows:

1. Breast milk

A number of studies over the past 70 years have clearly documented the advantages of breast-feeding. Safe preparation and use of milk powder or milk-based formula requires a clean water supply and refrigeration, two items in short supply.

By contrast, breast milk is safe, clean, requires no preparation and is normally available in adequate amounts. Breast milk is the uniquely appropriate food for infants, conferring good nutrition and a degree of immunity to disease, and assuring adequate growth. Breast milk is adequate for the infant's needs until four to six months of age. After that time, first liquid, then solid food supplements are required to keep up with the child's nutrient requirements. It is due to the vulnerability of the young child when this supplementation begins, often in unhygienic conditions, that the high risk of infection and possible death results.

2. Lactose intolerance, or lactase deficiency

Lactose is a sugar present in large amounts in cow's milk. Persons who lack the enzyme lactase have been identified as being unable to digest this sugar (lactase deficiency). When the lactose passes through the digestive system without being digested, it often causes diarrhea. If the diarrhea is not adequately controlled, in time the condition may lead to dehydration and ultimately death. Certain populations exhibit more lactase deficiency than others; in populations where milk is a common food, lactase deficiency is extremely rare. In populations where milk is not used extensively, proportions up to 25% of the population (invariably more adults than children) exhibit lactose intolerance. This suggests that lactase production diminishes with age as the adult becomes unaccustomed to drinking milk. There is evidence to suggest that children regain lost lactase production after being reintroduced to drinking milk; only one or two diarrheal episodes may result. Persons who react adversely to milk may not continue to return for subsequent supplementary feedings.

3. Hygiene

The sale and distribution of milk powder has been cited as one of the major contributors to the contemporary high incidence of infant mortality. The use of DSM depends on a safe supply of water for mixing the powder, for washing the containers, and for serving the milk. It also demands a high standard of hygiene on the part of the feeder. If any one of these is not clean, disease may result. For this reason, several developing countries have banned the sale of DSM.

4. Economics

Families which have become dependent on milk powder or milk-based formulas may, when economically or logistically disabled, over-dilute the formula to make a larger but calorie dense supply. In this situation, PEM may quickly result.

5. Appropriateness

Cow's milk may not be part of the traditional local diet.

6. The distribution of tinned milk (infant formula, condensed or evaporated)

All these milks create the same problems as DSM, especially if they are to be diluted.