

A MATERNAL AND CHILD NUTRITION PROGRAM IN COSTA RICA ¹

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The author describes the results of a program to bring about the recovery of seriously undernourished children and help keep them well-fed by providing health, nutritional, and social education to the family.

Introduction

Ignorance, unsanitary housing conditions, and inadequate nutrition are common determinants of disease in low-income families, particularly among children, whose active development renders them particularly vulnerable to the effects of malnutrition.

From the moment of conception, the child is exposed to the adverse effects of poor nutrition in the mother. Continued and direct exposure to such deficiencies after birth is likely to retard the child's growth and development, leaving him ill-equipped biologically to cope with the many factors or agents conspiring against his health.

Nutritional Centers for Mothers and Children

Costa Rica has the following facilities for a program against malnutrition in mothers and children: 104 nutrition centers; four nutrition rehabilitation centers with a combined capacity to treat 80 children at a time over a 10-hour stay; and one nutrition rehabilitation clinic, equipped to treat 40 children at a time during a 24-hour stay.

The centers provide nutritional care to a monthly average of 13,271 unweaned children, 29,467 preschool-age children, and 2,424 pregnant women.

They also distribute 50,000 pounds of

whole milk and 70,000 pounds of skim milk per month. The amount of money collected for their support by various committees has reached 442,397 colones ³ per year.

The fight against undernutrition begins in the health units. Here, an evaluation is made of the nutritional condition of the child, his diet, and the supplementary food he requires; the mother is given dietary training, her own nutritional state and her diet during pregnancy are appraised, and her supplementary food requirements are indicated. Relying on these units and on the distribution of whole and skim milk and the availability of funds collected by special committees, Costa Rica has drawn up a plan to combat undernutrition and facilitate the recovery of underfed mothers and children in areas of the country where the problem is of serious proportions.

Plan for a Campaign against Malnutrition

This campaign begins in the children's or prenatal clinic of the health centers mentioned above.

In the *child care clinic* the following activities are carried out:

Evaluation of the nutritional condition of the child. This evaluation is based on the three degrees of malnutrition defined by Dr. Federico Gómez,⁴ and on the normal-weight category shown on the weight chart

¹ Published in Spanish in *Boletín de la Oficina Sanitaria Panamericana* Vol. LXIV, No. 6 (June 1968), pp. 471-476.

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³ A Costa Rican colon is quoted at approximately US\$0.15.

⁴ A Mexican pediatrician and Director of the Children's Hospital of Mexico City.

that accompanies the medical history of each child.

Evaluation of the diet. The child's diet is evaluated on the basis of the nutrition report accompanying the weight chart. Stress should be placed on teaching mothers the value of certain foods that for one reason or another are not being used, or are not consumed in appreciable amounts, but that are readily available and can be helpful in combatting nutritional deficiencies in the child.

Provision of supplementary foods. The physician in the health unit will issue written authorization for the nutrition center to provide supplementary food in the following amounts per two-week period:

1. A maximum of 453.6 grams of whole milk to children of less than one year considered to be in the category of first-degree malnutrition.
2. A maximum of 907.2 grams of whole milk to children of less than one year considered to be in the category of second-degree malnutrition.
3. A maximum of 1,360 kilograms of whole milk to children of less than one year considered to be in the category of third-degree malnutrition.
4. A maximum of 456.6 grams of skim milk to children from one to two years of age considered to be in the category of first-degree malnutrition.
5. A maximum of 907.2 grams of skim milk to children from one to six years of age considered to be in the category of second-degree malnutrition.
6. A maximum of 1,360 kilograms of whole milk to children from one to six years of age considered to be in the category of third-degree malnutrition.

The written authorization should not be valid for more than two months, so that the mother will be obliged to return to the clinic with her child at the end of that time for its renewal.

In the case of children from two to six years of age who live near a nutrition center, the physician in the health unit will issue an authorization, valid for six months, allowing them to come to the center's can-

teen every day during that period for a supplementary meal (consisting of milk, an omlet with butter, vegetables, etc.), *rather than taking it home.*

A similar permit to receive the daily supplementary meal in the canteen of the nutrition center is issued to properly nourished children whose family is in a difficult financial situation that might jeopardize their nutritional state.

Visits should be made to the home to make certain that the supply of powdered milk is being used correctly, and special attention should be given by the health units to the periodic examination of undernourished children, who should, of course, be examined more frequently than those in a sound nutritional state.

Nutrition education. The training given to mothers in the health units in regard to the feeding of their children should deal with the following subjects:

- (a) Supplementary feeding of the unweaned child, based on the premise that by the end of his first year his diet should include the greatest possible variety of foods.
- (b) Feeding of the child after he is weaned.
- (c) The causes of malnutrition in the child and the foods that would aid in his recovery.
- (d) The causes of diarrhea in the child and the foods that would aid his recovery.

The training should be accompanied by practical demonstrations of the proper method of selecting and preparing foods.

In the *prenatal clinic* the following nutritional services are performed:

Evaluation of the nutritional condition of pregnant women. This evaluation is based on the woman's weight at the onset of pregnancy and the gain in weight during pregnancy, as indicated by the weight chart and table attached to each prenatal case history.

Evaluation of the diet. The diet should be evaluated on the basis of the nutrition report attached to the prenatal case history. The evaluation should be followed by appropriate recommendations, and an effort

should be made to impress on the mother that compliance with those recommendations is important to the health of the unborn child and will increase the possibilities for successful breast-feeding.

Provision of supplementary foods. A permit will be issued to pregnant women whose initial weight or weight gain is insufficient, so that the nutrition center can provide them with 453.6 grams of powdered skim milk per two-week period.

Nutrition education during pregnancy and lactation. The prenatal clinic of the health units should provide training to the pregnant women regarding the diet they need during pregnancy and lactation and the importance of mother's milk in the feeding of newborn children.

The volunteer committees of the nutrition centers will organize and operate two types of feeding services in each center: a daily service and a fortnightly service. The daily service, open every day of the week except Sundays and holidays, will provide a snack which will be served at mid-morning (between 8:30 and 9:30) so as not to interfere with either breakfast or lunch eaten at home.

This daily snack will be served to children less than seven years of age, to pregnant women, and to nursing mothers who live near the nutrition center and have the required permit from the physician of the health unit.

The fortnightly service consists in providing whole or skim powdered milk—the amount depending on the age or other characteristics of the recipient—to children, pregnant women, and nursing mothers who have the necessary permit from the physician of the health unit.

The nutrition center committee is authorized to request a contribution of half a colon for each pound of skim milk to help defray the cost of the service it provides.

Nutritional evaluations of children under one year of age and of preschool-age chil-

dren in Costa Rica show that 60 per cent of those visiting the health units are suffering from malnutrition, are under the normal weight and height, and are retarded in their psychomotor development and extremely susceptible to infectious disease. It has been verified that the network of centers described above is sufficient for fighting undernutrition but not for effecting the total recovery of seriously undernourished children. For various reasons, mainly financial, the hospitals are unable to keep the seriously undernourished children for the length of time required for full recovery, nor can the health units or nutrition centers cope with this problem in a satisfactory way. Consequently, a plan has been drawn up for attacking the problem in the areas where it is most acute. This scheme is based on concerted action by the units and centers, supplemented by a nutrition clinic and a nutrition rehabilitation center.

Nutrition Rehabilitation Plan

The proposed area of service of the nutrition rehabilitation plan comprises the districts of Guadalupe, Moravia, Tibás, Montes de Oca, Curridabat, La Unión, Desamparados, Alajuelita, Escazú, and the Central District, all in the metropolitan area of San José.

The objective of this plan is the nutrition rehabilitation of children up to six years of age residing in these districts and suffering from acute malnutrition (third degree malnutrition, according to the Gómez classification). In addition to this, an attempt will be made to encourage the families of malnourished children to visit the local health services (health unit and nutrition center); to improve the mother's and family's knowledge of personal hygiene and nutrition, and to help the families organize their finances more efficiently and make better use of the resources available in the community.

First Stage

Health units. All children, including those released after treatment in the Children's Hospital, should be registered with the health unit having jurisdiction in the place where they live. Here their nutritional condition will be evaluated and their degree of undernourishment, if such exists, will be determined. They will also be subjected to routine analyses (feces and urine), a hemogram will be taken, and they will be tested for total or partial proteinemia.

The children will also be inoculated against diphtheria, poliomyelitis, and tuberculosis (with BCG), and the mothers will be given health training, especially as regards personal hygiene and nutritional habits and practices.

Nutrition centers. These centers will provide powdered milk in sufficient quantity to supplement the home diet and satisfy the protein and calorie requirements of all children to whom authorizations have been issued by the proper health units.

After this first stage, which will generally take three months, children whose nutritional condition is still classified as one of *third-degree malnutrition* will be sent to the nutrition clinic in the Cristo Rey section of the city of San José.

Second Stage

Nutrition clinic. This clinic offers outpatient consultation services for all children under seven years of age referred by the health units serving the area covered by the plan.

The nutrition clinic will try to determine and, to the extent possible, eliminate, all the factors contributing to the child's undernourishment. This work will be done by a team consisting of a pediatrician, a social worker, a nutrition auxiliary, and a nursing auxiliary. The objective will be to bring about the nutrition rehabilitation of the child by the following means:

- Determination and treatment of all infectious conditions interfering with proper assimilation of food.
- Education of the mothers in regard to nutrition through individual and group counseling and instruction in cooking.
- Social work to assist the family in solving some of its economic and social problems, especially those that hinder proper distribution of the family budget and proper use of the resources available in the community.
- Health education for the home, intended to correct defects or omissions in personal hygiene and family diet.
- Provision of powdered milk to the undernourished child, in sufficient amount to supplement the home diet and satisfy his nutritional requirements.

After these steps are taken, if the child's nutritional status shows no improvement, he will be sent to the Nutrition Rehabilitation Center in Tres Ríos, where the third stage of the plan will go into operation.

Third Stage

Nutrition rehabilitation center. This center is operated by the Social Welfare Board of the District of La Unión and is available only to children showing no signs of nutritional recovery after undergoing the first and second stages of the plan.

Another admission requirement is that the child must not be suffering from syphilis or tuberculosis and must not be a carrier of diphtheria bacilli or enteropathogenic germs (*Salmonella*).

While the child is still at the nutrition rehabilitation center, his family will be given hygienic, nutritional, and social training by the appropriate units, so that when the child returns home he can receive appropriate care that will ensure complete and lasting recovery.

Summary

A scheme is being put into practice in Costa Rica to cope with maternal and child malnutrition. It is based on a network of health units—104 nutrition centers giving monthly treatment to 13,271 unweaned children, 29,467

preschool-age children, and 2,424 pregnant women; four nutrition rehabilitation centers with a capacity to treat simultaneously 80 children over a 10-hour stay; and a nutrition rehabilitation clinic capable of treating 40 children simultaneously during a 24-hour stay.

The infant consultation and prenatal care departments of the health units check the nutritional status and diet of children and pregnant women, and issue authorizations to obtain whole or skim milk from the nutrition centers or for snacks at the unit's canteen to supplement the diet.

In addition, another nutrition rehabilitation scheme has been drawn up for areas in which the problem is becoming more severe. Under this scheme, all children up to the age of 6 years

living in certain districts of San José and suffering from third degree (acute) malnutrition are entitled to take advantage of the authorizations issued by the health units to obtain food supplements in the nutrition centers. If after he has received such supplements for a certain period of time the child's nutritional status shows no change, the case is referred to the nutrition clinic, where it is studied and the mother given instruction in regard to diet and personal hygiene. Finally, if there is still no change for the better, the child is sent to the nutrition rehabilitation center, where treatment is continued while the family is given nutritional and social guidance so that when the child returns home he can be properly cared for and enjoy a full recovery.