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FINAL REPORT:

AFGHANISTAN NUTRITION STUDY PROJECT,

CARE, INC.

The following report was prepared by Saul Helfenbein, special assistant for the Afghanistan Nutrition Survey, with the assistance and advice of Margot Higgins, CARE nutritionist; Charles Laskey, Chief of the Afghanistan Mission; James Borton, Field Representative in Afghanistan; and Ralph Montee, Director, Program Department, CARE New York. Special appreciation must be given to all the officials of the Government of Afghanistan, USAID, and the United Nations in Kabul whose cooperation made it possible to gather together the bulk of the information presented herein.

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FINAL REPORT: AID INCENTIVE GRANT FOR AFGHANISTAN NUTRITION STUDY PROJECT

CHAPTER ONE - ORIGIN AND DEVELOPMENT OF THE NUTRITION STUDY PROJECT

For more than two years CARE has been seeking appropriate ways of extending its activities in Afghanistan in the direction of applied nutrition programs. In CARE, as in other organizations, there is increasing emphasis on the prime importance of reaching, with applied nutrition programs, preschool children and pregnant and nursing mothers an emphasis which was stated in very definite terms during the CARE Regional Conference at Kuala Lumpur in September 1968.

CARE/Afghanistan has for the past five or six years concentrated chiefly on the staffing and support of Avicenna Hospital, but has also contributed a number of food supplements to institutions providing MCH services. The enthusiastic acceptence of these food supplements encouraged the belief that a more extensive program of applied nutrition would be well received in Afghanistan. Government officials at the Ministries of Planning, Education, and Public Health expressed interest in the possibilities, but it was difficult for the small staff of CARE/Afghanistan to collect and analyze the necessary background information to document and support an innovative applied nutrition program. The basic statistics which might be expected to preface such a project proposal, such as, census figures, birthrate, infant mortality and child morbidity rates, family size, literacy, percentage of school attendance are based only on informed guesses at the present time in Afghanistan. Official figures exist but doubts about their accuracy are widespread. The incidence of malnutrition in the population, for example, was variously described as "not a major factor" and as "the major factor in 95% of all children examined in the polyclinics". Given such disparity in the opinion of

professional people, it seemed essential to do some first-handresearch on the nature and extent of the problem of malnutrition.

CARE was also aware that besides studying the problem of malnutrition to determine the country's nutritional needs, a thorough assessment of the capacity of the RGA (Royal Government of Afghanistan) to actively support an applied nutrition program, both administratively and financially, would be required to decide whether or not such programs were feasible in Afghanistan. Despite the favorable responses that CARE/Afghanistan elicited from government officials when the mission began to first consider the possibilities of an extended applied nutrition program, present and past experience--problems at Avicenna Hospital, CARE's unsuccessful school feeding program in 1961, the abortive plan to implement a feeding program for municipal workers in 1968, the long delays in reaching accord on the proper approach to the land and people development project in the Shamalan Valley as well as rumors of the problems of UN sponsored feeding programs and other development programs were facing--made it clear that there was an obvious need to find out how far the RGA would go beyond its informal approval of CARE's entry into applied nutrition programming. It was also clear that it was necessary to identify what channels existed for such programming, and which of them would be the most responsive and responsible counterpart organizations,so that appropriate CARE inputs would reach intended recipients.

The announcement by USAID of the availability of funds for Nutrition Incentive Grants for Voluntary Agencies was therefore most welcome to the CARE mission in Afghanistan. CARE applied for a grant to conduct the exploratory study--outlined above. The study team,

consisting of the CARE/New York nutrition adviser and a locally hired bilingual assistant began its work on July 17, 1969. Following the departure of the CARE nutrition adviser who laid the groundwork for and initiated the methodology of the study, the assistant continued the study until March 1970, at which point it was felt that sufficient information had been obtained about the basic nutritional conditions of the country and the possibilities for effective nutrition programming. CARE with the assistance of numerous government officials and professionals successfully developed and implemented a questionnaire on the nutritional status of pregnant and nursing women and preschool children and collected data from various sources to give credible dimensions to the nutritional situation in Afghanistan. Continuous discussions with RGA officials at all levels also substantiated that the government's initial interest in applied nutrition programs was solid. The creation of a Department of Nutrition in the Public Health Institute and the good prospect for the adoption of a national food and nutrition policy for the country has indicated that, although resources were limited and that the present capacity of the RGA to undertake extensive feeding or nutrition education programs was meagre, the government is nonetheless seriously interested in making a national commitment to improve nutritional conditions in the country.

In February 1970, the Department of Nutrition with the assistance of CARE/Afghanistan prepared a provisionary plan (appendix Id) for the formulation of a national nutrition policy and submitted it to the Ministry of Public Health. It is hoped that this plan will eventually become the basis for a comprehensive and coordinated plan of action that would focus national attention on the nutritional problems of the country and bring together the programs and activities undertaken by various ministries into a united effort to improve the nutritional

status of the country. The Department of Nutrition outlined the necessary steps that would have to be taken to achieve this goal: a) establishment of an nterministerial National High Council for Food and Nutrition; b) the setting up of nutrition divisions in ministries with related nutrition activities; and c) the development of the Department of Nutrition to act as an advisory institution to the High Council and ministries in matters of nutrition programming and planning.

After further discussions in March, 1970 with CARE/Afghanistan on the possibilities for continued CARE assistance to the Department, an unofficial proposal (appendix Ib) was submitted to CARE restating and re-emphasising the points made in the plan for a national nutritional policy, outlining in detail the specific goals of the Department of Nutrition, and, finally, requesting CARE to assist in implementing the Department's projects which included a) carrying out a nationwide nutrition survey, b) establishing a training center in nutrition education c) setting up facilities for nutrition rehabilitation and d) inaugurating a pilot supplementary feeding program in an MCH center. With few exceptions the Department's proposal was in agreement with the general conclusions the CARE survey had reached at that time over the most appropriate course to follow in nutrition programming for Afghanistan. In August 1970, the Ministry of Public Health submitted, this time officially, virtually the same proposal to the CARE Mission. It is felt that the Ministry is in accord with the specific programs of the Department of Nutrition and the general principles of an overall nutrition policy for the country.

On the basis of the formal request for assistance by the Department of Nutrition and the general recommendations the CARE survey team

has made for program possibilities, CARE/Afghanistan has submitted its own proposal (appendix Ia) for continuation of the Nutrition Incentive Grant for a second phase program that would support the activities of the Department of Nutrition and enable CARE to engage in other activities that would in general strengthen nutrition programs in Afghanistan. This support will be channelled into research programs on the nutritional status of vulnerable population groups, establishment of nutritional rehabilitation facilities, and the development of applied nutrition programs. CARE/Afghanistan's objectives in the proposal will be to see that the Department of Nutrition has sufficient funds and material resources to carry out its programs, to stimulate through these programs greater concern and awareness of nutritional problems, to help develop the institutional framework for coordinated government programs related to nutrition, and to increase the number of qualified nutrition personnel at all levels of the Ministry of Public Health.

CHAPTER TWO - EVIDENCE OF NUTRITIONAL NEEDS

I. Methodology of the Survey

As there were no reliable statistics on mortality of infants and children available for Afghanistan and little documented information on the nutritional status of either children or pregnant or nursing women, statements about nutritional deficiencies or diseases inevitably could only be guesses. The need for a comprehensive survey of the nutritional status of the population had long been felt, however, and such a survey had been recommended by a number of UN experts who had come to Afghanistan to study the feasibility of introducing various feeding or nutritional rehabilitation programs, or programs to improve health care for mothers and children. The lack of sufficient information often makes it difficult to formulate a nutrition program that can adequately and efficiently meet the needs of the people, but as valuable as these surveys are for background data when a nutrition program is being considered, they are extremely costly in time, money, and personnel. For example, the clinical and biochemical phases of the nutrition survey in West Pakistan reached almost a quarter of a million dollars. In Afghanistan where communication facilities are poor and travel difficult the cost of such a survey would be proportionately higher and perhaps for this reason no such study has yet been undertaken.

CARE did not envisage a study on such a scale. It had neither the time, money, nor personnel to identify dietary deficiencies by clinical or biological tests or to run a food intake study on a sufficiently numerous sample to ascertain the nutritional needs by deduction. What CARE hoped to do, however, was to collect as much circumstantial evidence as possible on nutritional problems through:

1) discussions with doctors and nurses working in MCH centers and prenatal clinics; 2) published or unpublished reports and studies relating to nutrition; and 3) the implementation of a nutritional survey designed to provide background on the general dietary patterns of the nutritionally most vulnerable groups in the population and data on infant mortality and child morbidity.

In most instances this threefold approach was successful. The questionnaire, which was especially devised for this project, gave the CARE team some very basic information which made it possible to better interpret statistics and figures coming from non-governmental sources, and also to discount or dismiss a number of speculations about the nutritional status of the Afghan population which had hitherto been received as gospel or had at least gone unquestionned. While many large gaps in information still exist, we have gathered together features of the general nutritional condition of pregnant and nursing women as well as infants and preschool children. This data we hope will provide the necessary background and justification for future applied nutrition programs in Afghanistan.

Although a nutritional survey of rural areas was specified in the Incentive Grant, it proved impossible to go into the provinces because sufficient arrangements were not made by the Ministry of Health to conduct a provincial survey. CARE,then, had to restrict the survey to Kabul and Nangarhar medical institutions where competent interviewers were available and women could be approached for interviews without much difficulty. However, over 35% of the women interviewed in the survey were living in rural areas and Kabul, despite its being the capital city, has a distinctly rural flavor so the rural focus of the survey has been basically held to. Ramazzan and the difficulty of

travel during the winter were also obstacles to the provincial survey. Even with the establishment of a Department of Nutrition in November and its adoption of the CARE survey as the basis of its first program, activity could not get underway until January 1970 and intensive efforts in this direction had to wait until April 1970.

Afghan personnel, doctors and medical students, who were available in Kabul and Nangarhar carried out the survey. In the latter site, more difficulties arose which halted progress in conducting the survey so that we were not able to obtain results for inclusion in this report. The survey there, however, is continuing at this time and the results will be forwarded to the Department of Nutrition.

An attempt was made to recruit female Peace Corps volunteers working in a smallpox immunization program to interview women they met while working in provincial villages. This was not possible despite the volunteers' willingness and eagerness. The girls lacked sufficient fluency in Farsi or Pushto, their enquiries into family and personal matters were greeted with suspicion, and their relations with the male counterpart vaccinators were less than happy at the time, so that although the Preventive Medicine Department of the Ministry of Public Health had agreed to their participation in the survey, the girls couldn't do very much.

The survey was conducted in the children's ward and the pediatric outpatient clinic of the Women's Hospital (Masturat) and in two MCH clinics. Seven medical students were employed by CARE to interview the women who brought their children to the hospital. We had hoped to get completed questionnaires from the seven MCH centers in the city, but the doctors and nurses refused to cooperate with us despite efforts of the Director of Clinics and Kindergartens to persuade them to do so.

Only two clinics came through after pressure was applied from the President of the MCH organization. We were further disappointed in the MCH organization because the doctors refused to allow the medical students to do any interviewing in the clinics. Another possibility that didn't materialize was the prenatal clinics as a site for conducting interviews. The Directress of the clinics did not get around to giving CARE permission until late February and by then the initial survey was being wound up.

Further findings were obtained from a clinical study of malnourished children coming to the pediatrics clinic of Masturat. This study was done for CARE by a pediatrician/nutritionist at the hospital and it covered approximately the same economic and ethnic (tribal) spectrum of women who were interviewed by the medical student. The study correlated dietary histories, hemoglobin counts and clinical examinations of ninety-nine children who showed clear signs of malnutrition. This study was undertaken to give sharper focus to the picture of the nutritional status of pregnant and nursing women and preschool children obtained in the interviews using the questionnaire. More information about the nutritional status of these groups came from previous studies, reports, and records which we unearthed in the Kabul Maternity Hospital, the prenatal clinics, the Public Health Institute, the World Health Organization, the various AID offices, the Ministries of Education, Planning, and Public Health.

The CARE surveys took place in October and November (1969), well before the period of peak incidence of malnutrition which occurs in late winter and early spring when children begin to manifest the effects of more than usual deprivation of essential foods. The medical students interviewed 285 women on a first-come first-interview

basis and the subjects for the clinical study were selected out of the children brought to the outpatient clinic who showed signs of malnutrition. Among the interviewed women, 64.8 percent were from Kabul city, 16.4 percent from villages in Kabul province and 18.8 percent from other provincial areas, the latter having made special trips to get treatment for their children they could not find in their home areas. The results from the provinces and Kabul are presented together becuase little variation that might suggest substantial differences between rural and urban feeding habits among the vulnerable groups was observed in the responses to the questions. Practically all the women were from poor families and their economic status rather than their geographic origins or tribal backgrounds seemed to be the primary factor influencing their nutrional status.

We could not get specific determinations of nutritionsl intake. The interviewers relied on the memories and honesty of these women and in general both were good. The women did not appear to be reticent about their pregnancies and nursing and child feeding practices. Those who couldn't give answers didn't and leading questions didn't seem to inspire fabrications or repititions of what other women had said in their presence. Some of the questions proved however to be incomprehensible to the women and went unanswered. Depending on the question, "no responses" varied from 0 to 55 percent. Results are based on the number of women who answered a particular question but for convenience this group which constantly varies in number is referred to as women interviewed. See Appendix for complete details.

II. General Information on Factors related to Nutrition Conditions

FAO estimates the daily per capita calorie consumption in Afghanistan to be 2050, not a very encouraging figure to begin with and probably too optimistic for most women and young children up to five years of age. The consumption of wheat, the staple food commodity, is estimated by AID's Agricultural Division to be somewhere between 160 to 180 kgs per person annually or between 450 to 500 grams a day. There are some speculatory figures about vegetable production in the country but only unrelieable guesses about intake. Few women coming to the outpatient clinic of the Women's Hospital said they ate vegetables and records from the prenatal clinics in Kabul indicated an equally unimpressive consumption of vegetables. There are a variety of milk products available in the bazaar but they similarly don't constitute a significant part of the diet of the groups who need them most--pregnant and nursing women and preschool children.

Most international experts put birthrates at 45-50 per thousand. A WHO sponsored study of MCH services in Kabul and surrounding areas figures fertility in provincial areas to be as high as 15 to 20 pregnancies per women and the mortality rate in the first year between 50 to 60 percent. Midwives from the prenatal clinics say that 30 percent of home delivery babies die in the first five days and this only represents estimates for babies delivered by trained midwives. (Eighty-one percent of the women who were interviewed delivered at home and only 9 percent of these had the aid of hospital midwives. Only 42 percent of the women who attended the prenatal clinics in 1967-68 delivered at home under proper supervision.) Figures from the interviews and the prenatal clinic records point to an infant and child mortality rate of 21.3 and 15.5 percent respectively (213 and 15

per thousand live births). The latter figure refers in large measure to young mothers with only one or two young children either on the breast or only just weaned, and also to that small percentage of women who use public health facilities, about 8,000 this year in Kabul and 1,000 more in the provinces. The prenatal clinic records showed, however, that among women with five or more children, the infant and child mortality rate was considerably higher--34.2 percent. In 1964 an FAO report claimed the mortality rate of children from birth up to twelve years was calculated to be 27 percent. In all cases it was impossible to determine at what age the child died. The latter figures, though lower than the claims of 50 to 60 percent infant mortality probably represent the true picture among most children in Kabul and the provincial areas where mothers don't or cannot avail themselves of any MCH or other public health facilities. They are also comparable to mortality rates in other underdeveloped countries. The average family size can be put with reasonable accuracy at six children, though one commonly comes across at all levels of Afghan society family units of ten or more children. Population statistics and growth rate estimates are still in the speculatory state, despite the attempts to make a general census of the country. Experts have put the population between eight and fifteen million, with about forty percent under fifteen years of age, and the growth rate between 1.75% and 2 percent which agrees with figures of other underdeveloped areas.

III. Food Habits

Traditions, though very few absolute taboos, exist about foods for pregnant or nursing mothers and preschool children that might effect their nutritional status either for better or worse. Pregnant women appear to have special likings for pickles, white rice

(occasionally raw grains), peppers, tea leaves and sweets. Many indicated a preference for gili-sar-shui, a calcium-rich clay which is usually consumed when women go to a favorite shrine to pray for the birth of a male child. Leeks, sour cream and buttermilk were also mentioned as foods with particular beneficial properties for pregnant women. In general though, the women who were interviewed said that every kind of food, meats, vegetables, soups, etc., was good. Although the interviewers did not have much success in finding out what the women considered harmful to the pregnant women, those few responses which were obtained to this question suggested that there aren't any foods that pregnant women particularly avoid with unanimity. However, the popular Asian medical theory of hot and cold foods which proscribes milk and milk products for pains and similar ailments is followed to some extent. In view of the fact that most women complain about pains continually during pregnancy, they probably rarely consume milk or milk products. Certainly from the dietary history taken from the women we interviewed, it was apparent that milk or milk products are normally not part of the diet. Similarly the patient charts of women coming to the prenatal clinics showed only a small percentage eating cheese or butter. Among nomadic women, tradition proscribes camel meat because it is said to prolong pregnancy and the only way to neutralize the effect is to pass under the belly of the camel.

Meat broth and vegetable soup appeared to be the favourite or preferred food during lactation, probably because they are the most economical to prepare; but again most of the interviewed women said that everything was good to eat. Melon, buttermilk, macaroni and sweets were the only special foods noted. The survey failed in this regard to elicit answers about foods which were thought bad for

nursing. The only thing mentioned was hard foods. However, proverbs advise nursing women to keep away from carrots, radishes, leeks, peas and clover which are believed to contaminate breast milk and give the infant colic. Fish is also contraindicated because it is supposed to prolong menstruation which is said to be harmful to a nursing woman. On the other hand, folk tradition recommends chicken and the meat from a sheep's neck. The latter is eaten to fortify the mother's milk and thereby make the infant physically strong.

"Fela" or colostrum is prohibited. The infant's first food before he is put to the breast is a purgative made of butter, herbs, sweets and zoof, (hyssop, a small seed). Infants are not supposed to eat foods that give gas; this injunction includes most raw vegetables and fruits. Practically all the women in the survey said that milk was the most important food for an infant, though some indicated portions of the family diet of boiled rice, dam pokht (rice boiled in meat broth), fruit juice, zoof, juani badyan (another local purgative). Few mentioned eggs. As the child grows, the family diet becomes the most important component of its diet, though soup and dam pokht seem to be the foods the women considered especially suitable for the preschool child, probably because they are both soft and therefore are considered most easily digestible. Both for the weaned and older child, eggs were rarely mentioned as desirable foods to give a growing youngster. On the other hand, no mention was made of particular foods women believed should be excluded from the child's diet.

Poverty and ignorance probably have more to do with the nutritional status of pregnant or nursing mothers and preschool children than do the beliefs about the positive or harmful effects

different foods may have. Educated women number only about five percent of the number of educated men. Among the families of the women interviewed only 63 percent had at least one member who had some schooling. About three percent of that number were women, either the mothers themselves, or a daughter or sister. In most cases it was the husband or brother-in-law.

IV. Food Production and Income

The average income in Kabul, according to a household expenditure survey conducted by the Planning Ministry, is about nine dollars a month, 60 percent of which goes for food. Wheat and wheat flour prices have remained low and stable for the last two years, but rice, meat,and vegetable prices vary considerable from season to season and are usually beyond the purchasing power of most families. Five dollars a month for food for a family of seven or eight doesn't go very far even in Afghanistan. Rural incomes, as indicated by the household survey for the Helmand Valley area, are below those of the urban population and the expenditure for food is higher. Although sheep, cows and chickens are kept on the farms, most of the produce apparently is sold and not consumed by the rural population, so that people on farms don't eat much better than people in the cities. Generally, rural areas are one or two-commodity producers. Meats and vegetables, or fruits from one area rarely find their way to other areas and when they do, they are exorbitantly expensive. Transportation difficulties also keep out a more balanced variety of food from many areas of the country, and some foods, especially fruits and vegetables, never even reach certain places such as the central Hazarajat or Badakhshan in the northeast.

There are efforts underway to increase the quantity and quality

of the food supply, but these efforts won't make any impact upon the lower economic groups or the rural population for a long time to come. The RGA is presently engaged in a crash program to make the country self-sufficient in wheat production in five years, and there are a number of other large land area developments in progress which may make diversified farming eventually possible. The (People's Republic of China) Chinese have been successful with an inland fisheries project in the Darunta Dam near Jalalabad city and are supplying excellent quality carp at reasonable prices,but in small quantities (and often irregularly)to the Kabul bazaar outlets. The Chinese also have in hand a poultry project to raise an estimated 5,000 chickens and ducks for meat and eggs but so far none are available on the market. This year there are plans to open a dairy plant in Kabul to reconstitute powdered milk and add to the supply of fresh pasteurized milk now available in limited quantities from the Ministry of Agriculture and the King's dairy farm, but this milk, although it will be sold commercially, will only reach wealthier Afghans and the foreign community in Kabul. The RGA hopes to build more such plants and then lease them out to private sector investors for actual production.

V. Health Status of Women and Young Children

The overall picture of the health status of women is depressing. The reported incidence of tuberculosis among mothers is about 50 to 60 percent of the incidence in the total population. Ill health is due also to osteomalacia (calcium and vitamin D deficiency) and protein deficiency. General debility and anemia are endemic because of multiple pregnancies and the superimposition of intercurrent infections of the gastrointestinal tract, the respiratory tract, and

the pelvic organs. Postpartum hemorrhages are common since most women are delivered by untrained midwives.

Children appear to look healthy and malnutrition is not often evident unless someone pulls the child's pants down and points out the melted subcutaneous tissue. Doctors have a tendency to claim that 80 percent of the children they see in the MCH or outpatient clinics suffer from some form of malnourishment. One FAO nutritionist did not observe any cases of malnutrition at a clinic he visited in 1969 while an AID report in 1963 cited that 20 percent of the children in the wards of the Women's Hospital had kwashiorkor. In a six-day study at the outpatient clinic of the hospital the daily incidence of preschool malnutrition was 16 percent. The incidence of TB among children in Kabul is about 20 percent of the total incidence of the disease. Whooping cough, parasitic infestation, dysentery and diarrhea, especially during the summer months, affect 30 to 40 percent of the preschool population. Vitamin deficiencies as noted by doctors at the MCH clinics cause a substantial number of the ailments for which children are brought to the clinics. Along with the poverty and ignorance that help to cause and perpetuate malnutrition the other basic problems affecting the health of mothers and children are the lack of adequate environmental sanitation and safe drinking water supply systems. Few homes have enclosed latrines. Cooking is often done out in the open over wood-burning stoves. Vegetables are washed in road-side ditch water. Children bathe in the polluted Kabul River and women wash their clothes and dishes in it as well. Although Kabul City has a fairly large water supply network, still close to 40 percent of the women obtain drinking water for themselves and their

children from shallow wells. In provincial areas, drinking water comes primarily from rivers, and Karezes (underground irrigation conduits) and wherever possible from underground springs.

The inadequacy of essential nursing and medical services primarily in the rural areas, but also in Kabul, also contributes to the chronic ill health of mothers and children. Conditions are somewhat better in Kabul for curative medical attention, but preventive medical procedures even in MCH and prenatal clinics are limited to immunization and only cover an insignificant portion of the population. The great majority of women and children seldom receive any medical attention at all.

In the MCH centers and polyclinics, malnutrition is considered as a secondary factor in diseases and is rarely thought of as directly related to the lack of proper food. There is no well-defined treatment for cases of malnutrition since most physicians have no background in nutrition and even less are convinced that malnutrition constitutes a real problem. Treatment is solely by drug therapy to cure symptoms.

CHAPTER THREE - RESULTS OF THE SURVEY

I. Dietary patterns of Pregnant and Nursing Mothers

The diet of the women on the day they were interviewed was in most cases typical of their diets throughout the year. For the majority it consisted of nan and tea in the morning, broth or some rice dish with a small chunk of meat and a vegetable on the side for midday, and nan and tea again in the evening. Seasonal variations in this pattern usually involve the addition of some vegetable or fruit or meat. In the winter it's possible to buy a sheep and salt cure the meat and this is often much cheaper than purchasing meat at the bazaar. However, for more than half the women there was no change at all in what they ate day to day. Few, moreover, (less than 10 percent) indicated that they ever ate more than one preparation, be it rice or broth, at one meal. Hardly any of the women ate eggs, drank milk, or consumed any milk product. Less than one-half of the pregnant women attending the prenatal clinic in the Maternity Hospital in Kabul and only a third of the women in the clinic in the old city indicated to the midwives that they did eat eggs but this was rarely more than one egg every three days and often only once a week. Only about 13 percent mentioned a milk product as part of their diet.

As a rule the families of these women did not fare much better. 72 percent of the women claimed they prepared meat for their families the day before the interview but 43 percent of this group said they were able to do so only once a week. When meat is available, most women buy between one and two pounds of meat for the meal and have to serve it,on the average, among four to seven people. Only 13 percent of the women can afford to buy more than two pounds of meat

but this again has to be divided among four to seven mouths. About 30 percent had to be content with less than one pound for a large family. (Very often there are eleven and sometimes as many as fourteen people present at the meal). The women themselves, according to the answers they gave, appear to eat appreciably less. Only forty-five women (15 percent) said they had eaten meat in the 24 hour period before they were interviewed (eighteen at dinner and twenty-seven at lunch) and 47 percent said they had had broth during this time, making it a total of 62 percent who had consumed some sort of meat dish for the day. The case records from the Maternity Hospital which noted the frequency for the consumption of various foods, showed that of the 120 women who indicated meat was part of their diet, half were able to eat meat at least once a week, thirty once every two weeks and thirty only about once a month.

Although a majority of the women who were interviewed said that when they were pregnant they were able to eat more than the other women in their households, or that they enjoyed good appetites (this saying amounts to the same thing), a substantial percentage revealed that they did not have enough to eat. Most of the women answered, too, that they often had to go with less than they wanted. During lactation, appetites appear to improve and nursing mothers continue to be able to eat more than other women; yet as the questionnaire indicates (40 percent of the women interviewed were nursing) their diets follow the meagre pattern of nan and tea, little meat and less milk or milk products and an occasional vegetable such as eggplant or spinach if they are in season, but more likely potato which is very inexpensive.

II. Lactating Patterns

The histories of lactation also confirm that nursing mothers don't consume enough or eat the proper foods to produce sufficient milk to satisfy the needs of the infants or young children who they will keep on the breast, if they can, for two or two and a half years. 43 percent of the women responded that they never had enough milk to satisfy their children though they continued to feed their children in this way; 29 percent had to stop nursing because their supply of milk was either inadequate or quickly exhausted. Of those who fed their children past the sixth month, 46 percent said that by the ninth month they were dry. Only about 25 percent claimed that they nursed either their present or previous child until the nursing period was over and often this meant for the most part that the infant was being pacified by the nipple rather than being fed. Almost a third of children between one and three years old, suffering from protein-calorie malnutrition which were examined in the clinical study were still almost entirely receiving nourishment from the breast. These mothers said their milk was practically non-existent.

III. Dietary Deficiencies

Protein and calcium deficiencies, a high incidence of anemia and osteomalacia and the very low weight of pregnant women well into their ninth month reflect the corresponding dietary deficiencies of this group of the population. On the basis of the records of hemoglobin counts of women coming to the prenatal clinics an average 61.8 percent had counts under 70 percent. A median of 80 percent (the average closer to 70) characterised the mothers of the malnourished children examined at the Masturat pediatrics outpatient clinic. Blood serum analyses of 300 mothers coming to MCH centers showed major calcium

and protein deficiencies. The Kabul Maternity Hospital reports that the first cause of death among mothers is the result of ruptured uteri (about 75 percent) and this is due to contracted pelvis caused by osteomalacia. Patients with osteomalacia represent 59 percent of all the cesarean sections performed at the hospital, with a mortality rate of 80 in 10,000. Miscarriages are also common: 25 percent among the women interviewed and 28 percent of those attending prenatal clinics. Doctors at the MCH clinics say that vitamin A and D deficiencies are frequently observed among the women. Similar deficiencies have been commonly seen among women in the prenatal clinics and Family Guidance Centers. 23 percent of the women at one prenatal clinic in their sixth month weighed less than 120 lbs. and 84 percent less than 140 lbs. At another clinic 44 percent were under 120 and again 84 percent below 140. For women much larger in build than those of the Indian subcontinent, these figures represent a marked pattern of below normal weight gain during pregnancy and are concurrent with the very high proportion of babies weighing well under three kilograms at birth.

IV. Feeding Patterns of Preschool Children - Breastfeeding, Supplementation, Weaning

As mentioned above, most women try to suckle their children until 2 1/2 years. However, this does not exclude some form of supplementation. All of the women who responded to this question (221 out of 285) said they offered the infant some other form of food along with their breast milk. Of the great majority who did add to the infant's diet, most began to do so between the fourth and sixth month. Only 46 women who either did not have any milk or went dry soon after the baby was born started the child on other foods almost immediately. By the time

the child was a year old most mothers said they had introduced supplementary foods including cow's milk and powdered milk.

The most common supplement to breast milk is nan and tea. This accounted for about 45 percent of the responses. About 30 percent said they gave their children some form of rice, mainly "dam pokht" (rice cooked in gravy or meat broth), 18 percent added soups, (broth, vegetable soup, or rice water), and 8 percent introduced cooked vegetables. Only 22 percent mentioned cow's milk or powdered milk as a supplement and half that milk products such as butter or "firni" (milk and cornstarch pudding). Traditional infant foods were given to only about 20 percent of the children and about 6 percent received something from the meals prepared for the rest of the family. The amount of any of the above foods comprising such supplementation, etc. usually very small, almost negligible, of rice or cooked vegetables, or soups (rarely more than one jamak--a small porcelain teacup.) Occasionally a mother said she fed the child a plate of rice or gave it two or three bottles of milk a day. In most cases if the milk is powdered mothers cannot read the instructions on the tins, or are not told by doctors or nurses how to mix the milk with water, so that most infants consume little more than chalky coloured water.

About a third of the women who responded in the interviews were able to state that their children were healthy when they were weaned. More than half said that their children were suffering from dysentery and vomitting; smaller percentages were noted as having fever, the gripes or being extremely thin (probably marasmus). During the clinical study conducted in the outpatient clinic, the complaint of thinness nearly always corresponded with the diagnosis of marasmus. Ten women said that at least one of their children had shown signs of

edema. Gradual weaning is uncommon. Breastfeeding is suddenly stopped when the mother becomes pregnant (41 percent) or she or her child becomes ill, or she decides she hasn't enough milk. Once the child is permanently off the breast somewhere between one and two years, for the majority the diet consists primarily of nan and tea or rice. About half the number who started supplementary feeding on nan and tea were subsisting on this after they were weaned and nearly as many children were eating from the family bowl. Broth and vegetable soup were given regularly by 25 percent of the women. Three women said their children died of starvation after being taken off the breast.

Most mothers set aside separate portions of food for their children, used a special cup or bowl and helped the child eat either with a spoon or by pushing the food into the child's mouth with a finger. About 28 percent indicated that they cooked food especially for the child. The main meal for preschool children seems to be the midday one, as it is for most women, and in the large proportion of responses it was evident that the child eats whatever the mother does, primarily rice, nan or tea, and occasionally broth. With most women cooking on wood-burning stoves (kerosene primuses and coal braziers are also common) and using large aluminum or copper pots, it is economically unfeasible as well as impractical to cook separately for different members of their family. In general the child eats with the mother and the mothers and women with the men of the family, unless male company is present.

V. Height and Weight of Children

The children of the mothers whom we interviewed were almost uniformally underweight and below normal height. The average weight for the 0 to six month group was 4.5 kilos, 2.4 kilos below the U.S. Department of Health standard; for the six month to one year group the average weight was 6.9 kilos, or 2.1 kilos below the minimum. In the one to two year and two to three year groups there were more significant below normal weight patterns to be observed, 4.3 and 4.6 kilos respectively less than the U.S. median. In the next two years the differences continue to increase so that by five years old the children were an average of 6.2 kilos underweight. Similar discouraging statistics can be given for average heights; lower readings, especially in the 2 to 3 year group, were obtained for weight and height in the clinical study done on the 99 malnourished children at Masturat Hospital. The latter group averaged less than half the U.S. standard for this age group.

VI. Incidences of Malnutrition

The highest incidence of malnutrition in the Masturat clinical study occurred between one to three years; 75 percent of the children who were examined were in this group, 38 percent in the one to two year age range, and 35 percent in the two to three year age range. The total number of children who formed the study represented about 20 percent of the children who came to the polyclinic during the six days of the study. If the proportion of age groups among the total number of children in the study is similar to that of the children who were with the mothers that were interviewed, where there were seven times as many one to two year olds as two to three year olds, it would appear from the high incidence of malnutrition in the latter

age group among the children who were selected for the study that, in general, malnutrition is most frequent among two to three year olds who are likely to have been weaned and who are existing on very inadequate and unmodified portions of the family diet.

The study revealed that half the children showed symptoms of kwashiorkor and half symptoms of marasmus. The incidence of vitamin A deficiency was 10 percent and it was seen primarily in children over two years of age, all of whom had been weaned and most of whom had chronic diarrhea. Therefore, it appears breastmilk supplies an adequate amount of vitamin A to prevent clinical signs of a deficiency which becomes clearly evident when chronic diarrhea and the resulting malabsorption interfere with an insubstantial diet. Clinical signs of rickets were noticed in 22 percent of the children suffering from kwashiorkor and in 10 percent of the children with marasmus up to one year of age. Past this age the growth process seems to have stopped because of severe protein calorie malnutrition and the ricketic process stopped with it. Hemoglobin levels were low in both kwashiorkor and marasmic children, but lower in the former.

VII. Conclusions:

An incidence of 20 percent malnutrition, even among a special group of children being brought to a polyclinic for various reasons including diarrheas, dysentery, failure to thrive, or respiratory infections, fevers, and other diseases, is a matter of serious concern and, indeed, might well constitute a public health problem if this incidence repeats itself across the country. Substandard growth, underdevelopment in muscle tissue, atrophy of subcutaneous tissue, visible signs of anemia, bossing of the skull, and delayed closing of the fontanelle have been noticed in short visits to

polyclinics in Kunduz, Baghlan and Jalalabad and have been attested to by Peace Corps as well as Afghan nurses/midwives working in the Kabul vicinity and other areas of the country. The clinical study established that both kwashiorkor and marasmus exist in Afghanistan and the serious pattern of underdevelopment in height and weight observed among almost all the children coming to the Masturat polyclinic indicates that the intake of food is dangerously low, especially in protein, so that the process of growth is jeopardized in a great many children and is at least one of the factors that have to be reckoned with in the high infant and child mortality rate.

The problem of malnutrition is further compounded by the poor nutritional status of the mother, who as a result of multiple pregnancies and inadequate dietary intake, especially of protein and calcium containing foods, cannot properly breastfeed the child and thereby inaugurates a process of poor nutrition that will be greatly accelerated once the child is weaned. The picture is also darkened by widespread poverty and even more ubiquitous ignorance that militate against the best of intentions shown by the women in introducing supplementary foods often as early as four months, sometimes as late as eight. The women who were interviewed were almost unanimous in their desire to improve the health of their children, and most recognized that at present the health of their children left much to be desired. Most of the mothers of the malnourished children were aware that the children were suffering from a failure to thrive, thinness, bodily swelling (edema), a lack of appetite or general debility from chronic starvation, but few if any perceived the relationship between the fact that the child was not receiving sufficient food and its poor health, and

many were at a loss over what to do when told why their child was so sick, other than bemoan the fact that they didn't have sufficient breastmilk to nurse it properly.

The CARE Survey has compiled enough evidence to generalize with a degree of authority that malnutrition is a problem in Afghanistan among pregnant and lactating women and preschool children, and that perhaps 20% of the children who comprise one of the vulnerable groups do not have an adequate intake of protein, vitamins, calcium and other nutrients. It is anticipated that the continuation of the survey into the provinces will confirm the initial findings and will certainly refine them, but the need for some broad-based nutrition program is evident even from the incomplete body of information we have collected. There is certainly enough justification to warrant that CARE initiate or cooperate in an applied nutrition program in Afghanistan and sufficient evidence to hope that the RGA will be stimulated to mobilize the resources at its disposal to make the implementation of a nutrition program possible as well as successful.

CHAPTER FOUR - CHANNELS FOR POTENTIAL PROGRAMMING: THE DEPARTMENT OF NUTRITION

I. Introduction

CARE must bear in mind that an effective applied nutrition program in Afghanistan will require four ground rules:

1) CARE will have to work with a counterpart agency or organization that is fully aware of the nutritional needs of the vulnerable sectors of the population and the administrative prerequisites for running a program to meet these needs.
2) CARE will have to be sure that the organizations with which it works in implementing an applied nutrition program can provide continuity in reaching a significant portion of the recipients.
3) There will have to be reasonable confidence that any counterpart organization that CARE cooperates with in carrying out such a program will have the capacity of eventually assuming total responsibility for the program.
4) There will have to be some movement toward integrating any applied nutrition program into a general food and nutrition policy for the country, so that CARE might anticipate technical, financial, and administrative support from government departments and cooperation from other agencies with activities related to nutrition.

All of these considerations must be emphasized because nutrition is a relatively new concept in Afghanistan, both as a medical problem per se and as a long-term factor in the economic and social development of the country. Few doctors have any background in nutrition and even less see nutritional problems as primary factors in mother/child health. Some awareness and considerable lip service exist in

higher echelons but so far little of this has permeated down to the actual public health service levels. Even among ministry officials in Health and Education, experience shows that "nutrition" is often just a label to justify some form of aid from the UN or other agency without much thought given to tying in such aid to a comprehensive program to improve the nutritional status of the recipients. In general,past programs have been aimed at the male adult, workers,and high school boarding students, clearly not to the nutritionally most vulnerable groups who should be the beneficiaries of supplemental food assistance programs.

II. Afghan Government Steps Toward a More Effective Nutrition Policy

Recently, however, the RGA has started to break new ground in the field of nutrition and there are hopes that the government might adopt a general food and nutrition policy as a guideline for applied programs. The new attitudes and efforts are heralded by the creation of a Department of Nutrition and MCH within the Public Health Institute that will function in a threefold capacity: 1) research; 2) advisory; 3) coordination for all matters of nutrition policy and programming. It is being headed by Mr. Mohammad Rasoul Miakhel, former director of the Public Health Institute Chemistry Laboratories and now National Director of Laboratories. Budget allocations have been approved for a staff of two doctors, a lab technician and a typist/secretary. The Department also will be given a free hand to draw from the operational budget of the PHI and to use professional staff and facilities of the PHI. Its own operational budget of 1,000,000 Afghanis will cover travel expenses for its doctors during nutritional surveys and further funds will be at its disposal if as is hoped the budget of the Public Health Training Center can be transferred to the Training Institute of the PHI from the Ministry of

Interior.

Along with the formation of the Department of Nutrition and MCH, the government appears to be taking steps to create a high-ranking Interministerial Council on Food and Nutrition Policy, in order to set forth goals and draw up plans to improve the nutritional well-being of the people and to coordinate various activities in the member ministries to see that these goals are reached with little duplication of effort and expenditure and as quickly as possible. Proposals based on the results of a WHO nutrition seminar for Moslem nations which was held in Beirut in January 1970, and which the Director of the Department of Nutrition attended, have been submitted to the Public Health Ministry. Although not as yet officially approved, they have been favorably received and publicized in the government press and on Radio Afghanistan in a number of interviews with Mr. Miakhel. As a consequence of these proposals, officials from the Ministries of Health, Education, Interior,and Agriculture have been sent to the American University of Beirut (AUB) in August 1970 to participate in a general orientation course on nutrition policy-making. The selection of the participants was made in consultation with CARE-Afghanistan. Other officials will be sent to similar seminars at AUB. It is hoped that these people will form the nuclei of departments of nutrition in their respective ministries that can undertake applied nutrition programs in the future. The Nutrition Department has also sent one of its staff doctors to the siminar. Although his absence may delay the implementation of some of the programs for a few months, the Department in the long run will benefit by having its own staff oriented to broad based programming and general nutrition policy making. AUB may also provide fellowships

in nutrition sciences for members of the Ministries of Planning, Education, Health, and Agriculture and Irrigation in order to augment the number of trained personnel in this field so that nutrition programs will have competent administrators.

III. Current Plans of the Department of Nutrition and MCH

Following is a resume of the Department's current activities, program plans for this year, and goals for the future, as outlined in a Plan of Action submitted to the Public Health Ministry:

1) The Department of Nutrition has already begun a nutritional survey of the provinces using the questionnaire developed by CARE to determine the nutritional status of pregnant and lactating mothers and preschool children. It prepared for the survey as early as November 1969 by introducing the subject of nutrition and the necessity for nutrition surveys to a seminar of provincial public health directors and at the same time requesting their assistance in the survey. It officially began in January 1970 with a trip to the provinces of Baghlan, Kunduz and Jalalabad where the CARE Nutrition Representative and Mr. Miakhel distributed the questionnaires and demonstrated the method of interviewing. The staff of two doctors (one of whom is a woman who will be able to make home visits) will continue the survey and with the assistance of a lab technician and the support of the PHI laboratories will undertake clinical and biochemical analyses. The survey of the country is expected to take at least three years to complete.

2) The Department of Nutrition also expects to play an important role in the Shewaki Training Center for Public Health personnel (nurses, midwives, and doctors). The training center, formally run by the Rural Development Department, will be reopened under the Public Health Ministry and administered by the Training Institute of the PHI. Nutrition in both its curative and preventive aspects will be stressed in general seminars designed to make the participants more aware of the primary role nutrition plays in mother/child health and in practical work by the observation and treatment of cases of malnutrition coming to the MCH center at Shewaki.

3) In this regard the PHM, on the basis of recommendations made by WHO, hopes to set up a rehydration and rehabilitation center at Shewaki, as a pilot program for similar treatment in the provinces on a daily basis. It will also open a temporary malnutrition ward in Wazir Akbar Khan Hospital for the treatment of acute cases of malnutrition diagnosed at the Shewaki MCH center. Both these facilities will be supervised by the Department and run in conjunction with the training center to give participants practical experience in nutritional rehabilitation.

4) One objective of the Department of Nutrition at the training center will be to teach systems for effective administration of applied nutrition programs, specifically food assistance projects. It plans to incorporate a supplementary food assistance program into the MCH center, using WFP and perhaps other commodities. This program will be both a pilot project and hopefully become a model for similar programs around the

country. Under the direction of the Department staff participants from MCH, Basic Health, Afghan Family Guidance Association (AFGA), and hospitals will learn the fundamentals of storage, preparation, and distribution of commodities as well as administrative control and accounting by working in the program. The Department recognizes that the aforementioned areas must be strengthened if programs are to run smoothly and effectively and be free from the diversion of commodities that have occurred in previous food assistance programs. Through this model pilot program, it hopes to provide the foundation for well-run food assistance programs in provincial MCH centers as well as lunch programs for elementary schools.

5) The Department of Nutrition also foresees for itself a significant role in the future of MCH services, both in training MCH personnel for nutrition activities and as general advisor to the MCH organization in all areas of mother/child health. Dr. A. W. Musleh, Nutritionist/Pediatrician, who has been the attending physician in the Bebe Mahroo MCH clinic, will work with the department in this capacity. He was former director of MCH in the Public Health Ministry before being assigned to the clinic. Similar consideration is being given to establishing working relationships with the Afghan Family Guidance Association.

6) Programs in nutrition education are also being considered. Efforts will be made to coordinate its training activities with the Ministry of Education project in the development of new textbook and practical arts curricula. Elementary

school teachers will be invited to participate in the Shewaki Center training program, or special seminars will be organized for them, so as to give them a background in nutrition as a preparation for effectively teaching the subject. A Division of Education will eventually be established in the Department which will work with the Visual Aids Department of the Ministry of Education in the preparation of various teaching materials, to enable elementary teachers to more effectively implement the new curriculum.

Emphasis in these programs has been placed on acquiring high level support from an Inter-Ministerial Council on Food and Nutrition, in training qualified personnel to carry out these programs and in fostering cooperation between as many ministries and government organizations as possible. Obstacles have, of course, been encountered The Women's Hospital (Ministry of Education) refused to allow the Department to set up its nutrition ward in its 100 bed children's ward and bureaucratic problems have impeded formal discussions between the Department and Family Guidance. The Department also lacks control over provincial hospitals. The first questionnaire returns from Pule Khumri, Kunduz,and Baghlan were not particularly encouraging in terms of either quantity or quality. The questionnaire has proven too sophisticated for midwives or nurses to implement. Such problems are typical and will continue to arise, but the Department is trying to obviate as many of them as possible. The Department has already sent a revised and shortened version of the questionnaire to the provinces, and it hopes the new questionnaire will be easier to implement.

It has asked the Public Health Ministry for the authority to insist upon the cooperation of any organization or ministry it works

with and has already received a letter from the Deputy Minister of Public Health stating that all MCH centers are to be under the advisory control of the Nutrition Department.

In seeking assistance, the Department of Nutrition would prefer to work with only one foreign agency in order to avoid the conflicts that may arise from a multiplicity of agencies with their own special and particular programs. Perhaps because CARE was present or assisted at its birth and is presently continuing cooperation in carrying out the nutrition survey, it has requested that CARE provide the necessary support for achieving its goals. At this point, the Department needs guidance (rather than direction) to keep its programs from expanding beyond its financial and technical abilities. As long as the Department can promote training programs to develop interest and awareness of nutritional problems and their solutions, continue to collect information on which to base applied nutrition programs, and increase the number of qualified personnel to run them, there is a good chance that it can grow into a viable and strong agency that can transform the emerging concern about nutrition into well-planned, well-coordinated and well-executed action.

CHAPTER FIVE - CHANNELS FOR POTENTIAL PROGRAMMING: ORGANIZATIONS REACHING PREGNANT AND LACTATING MOTHERS AND PRESCHOOL CHILDREN

I. Introduction

In investigating the channels for reaching the three vulnerable groups, CARE considered the feasibility of implementing a nutrition program that would correlate supplemental feeding, health care, nutrition education, and family planning as recommended by the AID Easton Maryland Conference. However, such a program does not seem tenable at the present time because there seems to be insufficient interest among the various organizations dealing with mother/child health in planning or, indeed, cooperating in a comprehensive program. Nor do these organizations themselves offer much evidence that they would be able to successfully carry out extensive applied nutrition programs individually. They lack, for the most part, proper administrative machinery, and sufficient and qualified female personnel upon which any program would depend. It is also doubtful whether they are fully convinced that an applied nutrition program would be worthwhile and whether they would take steps to fully support such a program.

Three institutions now work in the area of mother/child health. They are the Rozantoon Society, a semi-autonomous organization, which embraces mother/child health, prenatal care clinics, the Maternity Hospital and five kindergartens (an effort, however, is currently underway to integrate the Rozantoon Society more closely into the framework of the Public Health Ministry, though Rozantoon is resisting and is still holding on tightly to its independence), the Afghan Family Guidance Association and the Basic Health Services. Rozantoon's MCH services deal almost exclusively with preschool children, primarily infants. The prenatal clinics take care of the women and they are tightly tied to the Maternity Hospital administration, which while

officially a part of the Rozantoon organization, in practice functions independently. Family Guidance is a semi-autonomous organization,too, and it deals only with women. Basic Health Service is a Public Health Ministry department and it is supposed to cover all people in the rural population it serves. However, the emphasis will be placed on women and children.

II. Rozantoon Society: Mother/Child Health Clinics

There are seven MCH clinics in Kabul, one in Shewaki, and eight Public Health Ministry MCH clinics in the provinces, with some of those existing there in name only. Until March the Kabul and Provincial MCH centers were under separate administrations, Kabul's belonging to the semi-autonomous Rozantoon Society and the provincial ones to the MCH Department of the Public Health Ministry. Now they are scheduled to be brought together under the Public Health Ministry's MCH Department. The MCH clinics presently only provide services for children: smallpox immunization, BCG vaccinations, examinations, and medications. They are also primarily oriented toward the sick baby, only one clinic making an effort to get mothers with well babies to attend by distributing UNICEF soap. Sick children are referred to Masturat Hospital in Kabul but no report of the diagnosis from the clinic is sent with the child, nor are follow-ups made on the child's condition or treatment. Immunization for diptheria and other contagious diseases other than smallpox occurs only when there is a national program. Children are usually perfunctorily examined and treated for symptoms. Some medicines are dispensed at the clinics but mothers are often urged to purchase them in the bazaar. When UNICEF stopped the milk program, registration sharply fell but with the resumption of the milk distribution program it is again on the

upswing. On the average the doctors see about 40 children each morning. Competent pediatricians or doctors with some experience in pediatrics staff all but one of the clinics. They are assisted usually by a nurse and a pharmacist/compounder. Occasionally a medical student doing his internship helps out. None of the clinics has a program for mothers with infants or young children to teach proper nutrition, infant feeding, or prevention of childhood diseases.

III. Prenatal Clinics

Five prenatal clinics in Kabul,run in closer conjunction with the Maternity Hospital than with MCH, serve 8,000 women. Prenatal care starts from the sixth month, with fornightly checkups that include weighing the women, taking their hemoglobin count, referring them to hospitals in cases of complications, assisting in home deliveries,and a postnatal follow-up visit during the first five days after which the mother is usually referred to an MCH clinic. Each prenatal clinic, open twice a week, once for new prenatals and once for old prenatals, is staffed by a gynecologist and three to five nurses/midwives. In the crowded areas of the city the clinics get about ten new registrants a month and see about 45 pregnant women per session. Other clinics have a regular attendance of about 10 to 20 women. Three of the clinics have afternoon programs for prenatal instruction, but only in one, the Bebe Mahroo (Kabul) clinic, is there any continuous effort to teach the mothers something about prevention of contagious disease, nutrition,and the preparation of baby formulas (the last dropped when the UNICEF milk program was stopped in 1967.) Although the milk program has been resumed in the MCH clinics, the prenatal clinics stilldo not receive any milk. The lack of milk has had an impact on registration here too, evident in the marked decline

from 9,785 registrants in 1965 to 7,780 in 1968.

IV. Afghan Family Guidance Association

Family Guidance has been building up a good reputation over the last two years since its formation as an autonomous organization (funded by the International Planned Parenthood Federation). It has three clinics in operation in Kabul, one in Shewaki, and five more are planned for opening in the provinces this year. The Kabul clinics have been well attended so far; the nurses/midwives often see more than 50 women per clinic session, and hopes are high for the success of the provincial clinics though there are no estimations yet of how many women may be reached. The first provincial operation in Shewaki began well but got bogged down during the fast month of Ramazan. Efforts are being made to revive attendance through a promotional program of home visits by social workers to women in the area. As a result more women are coming down to the clinic, however, predominantly for gynecological checkups which are also offered by the attendant midwives. Because of its limited staff of social workers, follow-up visits aren't made and the Family Guidance Association can't evaluate the impact of home visits on the program in Shewaki. Provincial family guidance programs will be primarily for women living in provincial centers with populations of 50,000 to 80,000 people. The Association has already signed protocols with two municipalities (Herat and Laskargah) and activities are reportedly being carried out there unofficially. These activities are mostly educational. Another clinic in Kandahar was temporarily closed down in the face of opposition by the Governor who feels family guidance may be a euphemism for genocide. Discussions are also underway with three other cities about facilities and staffing. The provincial

AFGA clinics are making use of already existing MCH maternity facilities as well as personnel attached to them both to save money and to try to integrate more closely these services with Family Guidance (family planning). Peace Corps was hoping to inaugurate a joint program with the Family Guidance in 1971 but the project has been temporarily shelved pending clearer evidence of RGA commitment and involvement.

V. Basic Health Services

Basic Health Services were originally units in the over expanded and now defunct Rural Development Department. They are now being reorganized by WHO in a three province pilot program. They are envisaged as providing a nucleus of health activities in an area encompassing about 40,000 people and are intended to provide curative and preventive health care and serve as a center from which health services radiate through sub-centers to surrounding groups of villages. The services include medical treatment, sanitation and water supply, and MCH and prenatal care. The pilot programs are underway in areas where malaria eradication programs have entered the maintenance phase. UNICEF has built adequate premises and equipped them with necessary medical supplies. However, centers are not staffed by female nurses. There is usually an all-purpose vaccinator-pharmacist-sanatarian on hand and the hospital doctor visits the clinic about once a week. But there is not much the men can do. The absence of a female nurse means that local women won't come to the clinic. Attendance rarely exceeds more than ten a month and fathers don't bring their children to the centers unless they are acutley ill. This lack of female staff is distressing particularly in the Baghlan-Kunduz area because nine trained midwives

are available to staff the Basic Health Services clinics. The girls are not under the jurisdiction of Basic Health Services; there isn't any transportation to ferry them back and forth; and most girls won't go to a rural clinic anyway without proper chaperoning. The main center in Baghlan had one midwife but she left the site and there doesn't seem to be any likelihood that she will be replaced.

Evident in all these programs is the lack of any delegation of authority, the refusal of personnel to make decisions and the consequent bureaucratic snafus that tie up all programs into knots. This has been seen most frequently in the Rozantoon Society where the Director of the Department of MCH has little control over his clinics, which are treated as private fiefdoms by the individual doctors running clinics. Moreover, communication between the directorate and the clinics is negligible. As a result,policy changes, or in fact any decisions at all, are slow in filtering down from the top unless the executive of the organization directly contacts the clinic, usually by phone. In the provinces administrative inertia has made it almost impossible for either the Public Health Ministry or WHO to procure the transfer of the idle midwives to the Basic Health Service centers and sub-centers where they are desperately needed. This has not only jeopardized the Basic Health program but the Family Guidance program as well, for the Peace Corps may drop its supporting nurse/midwife program if it doesn't receive firm assurances that volunteers will be assigned counterparts. Meanwhile the PC volunteer has decided to restrict her activities to the main clinic in Baghlan until the program is running smoothly. In general, all phases of program planning are rarely consistent with budgetary resources or personnel. With the current pressure being exerted by the new Public Health

Minister to expand these vital programs it is likely that there will probably be a continuation of preparing technical plans to meet greater need based priorities before financial sanctions are received from the Finance Ministry. Thus very often fundamentally well designed programs are strapped for funds and inadequately staffed at the crucial take-off stage and subsequently continue to limp along without sufficient financial, material,or human resources so that there existence is more in name than in fact.

More nurses are being trained in the Maternity Hospital Nursing School, but certainly not enough to meet the need even in Kabul. Some auxilliary nurses/midwives are being trained in the provinces and WHO is considering opening a provincial nursing school in Baghlan but the general lack of motivation on the part of most trainees as well as graduates and the various social pressures that keep them from working in the rural areas continually leave programs under-staffed. Family Guidance has a fairly extensive and long term out-of-country training program for Kabul doctors and midwives but at the same time is going into the provinces without any organized program for training competent midwives to staff the clinics or retraining present staff nurses in family planning methods. It is still undecided whether Kabul midwives will be sent to the provinces to train the girls, or provincial nurses will be invited to training courses in Kabul. The Association's other training plans include courses for more social workers, twelve for Kabul but none so far for the provinces. The number and competence of female personnel will be a crucial factor in whether the program succeeds in attracting women and children to it, and in building confidence in both these programs where local governments regarded them with a degree of

suspicion. Regular attendance at most provincial hospitals and out patient clinics is negligible in many areas of the country. It may rise if WFP is able to get its new mother/child food assistance program off the ground. But competent personnel will be required to ensure that food rations will be made available at the clinics according to an effective distribution plan so that the intended recipients will have the confidence that when they attend the clinic the food rations will be distributed as scheduled. Previous programs have lapsed because food assistance program management could not ensure this. They must also be trained personnel to stimulate the interest of mothers in learning about better nutrition to reinforce the benefits of WFP commodities in improving theirs and their children's diets.

VI. Training in Nutrition

Little emphasis in nurse training is now placed on nutrition. The nurses get a little theory but even that is soon forgotten when most of them don't get a chance to use it in practical situations. Moreover, most of what the nurses know about nutrition has little relevance to the needs of the people; whenever they try to teach women nutrition they do so in the form of lectures with few demonstrations or supporting visual aids to reinforce what they have to say. Consequently, the impact of this training is limited. Some attempt at nutrition education is made in the Family Guidance Clinics, but women rarely come more than once a month to a clinic so that it is doubtful whether these efforts have lasting value. Even with courses in nutrition at the Shewaki Training Center under the direction of the Department of Nutrition, programs will not be effective unless the mother/child organizations revamp their programs to include regular prenatal and postnatal nutrition instruction, and provide the nurses/midwives adequate moral and material support to educate the women properly. It is hoped that offering incentives to the women coming to the clinics, perhaps in the way of well administered food

assistance or other commodity distribution programs, will make it worth their while to regularly attend this kind of instruction.

VII. Frequent Administrative Reorganization

One disconcerting fact that has to be lived with all the time is that organizations may either be disbanded or change administrative hands. The Rural Development Department (RDD), until this year was an interministerial operation under the Ministry of Interior, but has now been divided among the Ministries of Education, Health, and Agriculture. This dissolution has aborted one of the RDD's more imaginative programs--Home Improvement Workers. Under this program twelve village girls were trained over a two year period in various aspects of home improvement in order to teach village women hygiene, nutrition, child care, home economics, etc.,through home visits. This program is now languishing in limbo because no one knows under which ministry it belongs. The Rozantoon Society whose semi-autonomy made it a very favorable programming channel, at the time the preliminary report on the nutrition study was written, may soon be incorporated into the Ministry of Public Health as a Department of MCH for all mother/child facilities in the country. Such a move may add to its administrative and financial woes which were more than enough when it was independent and funded by the Public Health Ministry with contributions from the Finance Ministry and private sources. Along with Rozantoon's own internal administrative delays, there will undoubtedly be those of the Public Health Ministry if all of Kabul's MCH facilities are integrated into the nation's Public Health program.

VIII. Conclusions

Although these institutions often have parallel programs in using the same building facilities and sharing the same personnel, they are in fact independent of one another. Without exception, the directors of these institutions have expressed interest in receiving aid from CARE and all have promised to insure that any forthcoming assistance would be properly administered. However, each repeatedly stressed the desirability of a separate program for its organization and expressed doubts about the potential for success in a joint program. The various obstacles in the way of cooperation and the competition for funds and material resources have ended in the dissolution of the RDD, to mention one case. The inability of various organizations to get together in planning a program that will avoid duplication of effort in mobilizing available resources and to solicit maximum cooperation from the various lower officials who will be responsible for the implementation of the program in the field has, for example, been one of the hurdles that the UNICEF milk program has not always been able to clear. Similarly this is one of the obstacles that the Peace Corps encounters continuously in its public health programs. The Department of Nutrition will hopefully fare better. Its birth was attended by a number of the Directorates of the Public Health Ministry and one of its principles is to foster as much cooperation as possible among organizations whose activities relate to nutrition through both its own programs and through advising an Interministerial High Council on Food and Nutrition Policy. The Nutrition Department may perhaps lay the foundation for the possibility of implementing a comprehensive health/nutrition/family planning program.

CHAPTER SIX - EXISTING FOOD AND NUTRITION PROGRAMS

I. Introduction - Food Assistance Programs

Major food assistance programs in Afghanistan are being handled at present by UNICEF and WFP. In addition there are a few programs run by the Afghan Government such as the Ministry of Finance commodity support (meat, flour and edible oil) program for government officials, and a few kindergarten and nursery programs offering milk and snacks to children. The Red Crescent also runs emergency relief programs in times of natural disaster. Institutional feeding in hospitals and welfare homes is generally inadequate, both in terms of the provision and preparation. The strictly government-run food programs do not reach any of the nutritionally most vulnerable groups or poor people on a regular basis. The UNICEF and WFP programs have been hounded by administrative, storage, and distribution problems since their inception. The analysis presented in this chapter is not intended to belittle the efforts of any organization involved in food assistance programming but to point out the real difficulties that any food program will encounter including any that CARE might undertake.

II. UNICEF

The UNICEF milk distribution program has been a stop-and-go affair for the last few years and has been largely unsuccessful in getting the milk to the intended recipients--mothers and children--who are supposed to receive it at hospital outpatient clinics, MCH centers,and prenatal clinics. The UNICEF program formally ended in July 1970 when it was taken over by the WFP. In addition to milk, the WFP will distribute wheat flour, cheese, fish, powdered eggs, and sugar to mothers and children at the above mentioned institution. Relatively little criticism has attended the current WFP food-for-work

and boarding school assistance programs. However, many of the problems that have attended the UNICEF program are common to food assistance programs in Afghanistan. These will become even more evident as soon as WFP expands its program into mother/child feeding.

Although the situation has improved since CARE's 1961 attempt at school feeding, many of the past and present problems are similar CARE's problems in trying to set up a feeding program stemmed from a general lack of government support and almost no realization on the part of the government of the scope and magnitude of their program responsibilities; budgetary requirements were not considered and met; funds were difficult to get allocated or approved; understanding was laching as to whom the beneficiaries were to be; and minsitries involved failed to assume responsibilities of the burden of running the program.

For over a year more than one million pounds of milk supplied by USAID have been lying in the Rozantoon warehouse in downtown Kabul, waiting to be distributed and with the exception of the milk given to the MCH clinics and Rozantoon kindergartens in Kabul are still waiting. Shipments of 300,000 pounds have come in periodically since July 1969. They have been improperly stored because of the mistaken assumption that they would be quickly distributed. In late April distribution to the provinces was expected to begin but with the administrative transfer of the program to WFP, distribution has been held up. On December 20, 1969, UNICEF authorized Rozantoon to distribute 420,000 lbs. to the former Rural Development Authority (the Ministry of Interior hadn't confirmed that the RDD had been dissolved), 300,000 lbs. to the Ministry of Health and 151,000 lbs.

to the Ministry of Education. This was the first of a series of authorizations since UNICEF resumed its milk program after a two year hiatus which UNICEF brought about by dropping the program until the RGA provided adequate storage facilities. These facilities were originally specified to include a hangar at the new customs house outside Kabul, but the Ministry instead built the Rozantoon warehouse. The program's present inertia has been blamed on the Rozantoon Society which is only responsible for bringing in the milk from Peshawar to Kabul and storing it in its warehouse. From there on in it is the job of the beneficiary institutions to get the milk delivered by supplying their own transportation and paying a 2 1/2% service charge to Rozantoon to cover warehousing and shipping costs. Many who have dealt with Rozantoon feel that Rozantoon is a difficult and unaccommodating organization if something has to be done. While these problems would not be insurmountable inasmuch as UNICEF supplies vehicles for distribution and each recipient institution has special funds allocated for transportation, storage,and administration, the program is tied up by a jungle of red tape surrounding Rozantoon and personality conflicts among the directors and officials of these institutions that prevent any cooperation. Invariably either a driver, a vehicle, an opportunity, or funds, is always missing when the milk is scheduled to be picked up. If not this then the warehouse custodians cannot be found to open the warehouse to let the milk out when the trucks do arrive.

UNICEF made two unsuccessful attempts to improve the program, once by cutting off the supply until the ministry complied with its request to provide better storage facilities; and then in 1967 by offering to assume in-country transport costs in exchange for a

fulltime government officer deputized by the Public Health Ministry to administer the program. So far, there has been no response from the Ministry. The only leverage UNICEF has is the threat to cut off the milk and occasionally that has worked but the results were hardly what were expected. Only recently UNICEF warned Rozantoon that the program would be suspended if the present milk stocks were not distributed; and Rozantoon, in response, went ahead and completed the second wing of the warehouse. Such difficulties have not only held up milk distribution, but the distribution of practically all materials being stored in the Rozantoon warehouse. UNICEF, for example, has been unable since February 1969 to remove 400 boxes of education materials from the warehouse and deliver them to the Ministry of Education. Even spare tires for UNICEF vehicles have remained in Rozantoon's warehouse despite personal intervention by the President of the Rozantoon Society to have them released.

The only administrative control UNICEF has over a program is monthly distribution report certified by the provincial Health or Education Officer. Beyond that, there is little that the UN agency can do, both because it is shorthanded--one valiant Program and Supply Officer who has other programs as well to worry about--and because contractual agreement with the RGA leaves full administrative responsibility to the Government. Understandings have been reached with recipient institutions on the implementation of some controls but they are largely without substance. For instance, MCH centers open the sack of milk before it is distributed to the mothers, a measure intended to make the milk unacceptable in the bazaar but this doesn't prevent the MCH staff from helping themselves to milk from the open sacks. The Kabul Police have also been instructed to

report the sale of UNICEF milk in local shops and shopkeepers have signed statements that they won't sell the milk. Milk still appears in the bazaar. WFP and UNICEF claim that the supply does not orignate in Afghanistan because the milk doesn't come in a two kilogram sack. Afghan officials, in informal discussion, disagree. The Director of Rozantoon's MCH clinics and kindergartens privately admitted that his MCH staff cannot be completely trusted; discrepancies have been noted in the stated and actual monthly ration given to mothers at the MCH centers; and there are plenty of plastic sacks available on the bazaar to repackage the milk. The sale is, of course, less obvious than it was three years ago when it was possible to buy UNICEF milk with USAID stamped on the sack, and the supply is relatively limited because practically all the milk is locked up.

UNICEF doesn't seem to be too worried at this point about possible theft or abuse. Its philosophy is that if 80 percent (probably meaning 50 percent) of the milk is programmed effectively the program can be considered successful. UNICEF's primary goal now is to work itself out of the administrative mess it is in with Rozantoon over the problem of distribution. After that, the problems will belong to World Food Program.

III. Current World Food Program

WFP now has eight projects in Afghanistan: 1) food assistance to Kabul boarding schools, and Kabul University; 2) food assistance to Kabul University Cafeteria; 3) food assistance to provincial boarding schools; 4) food-for-work programs at three coal mines; 5) food-for-work program in the Paktia Development Authority; 6) food assistance in the Helmand Afghandab Valley Resettlement Scheme (this program is not related to the Shamalan land and people development scheme); 7) food assistance for vocational training and

rehabilitation in Marastoon Institute (House of the Destitute); 8) and an approved but not yet operational food-for-work program in the construction of a fertilizer plant and an electric power station. A five year food assistance program to health centers, polyclinics, and kindergartens, to be executed by the Public Health Ministry through the Rozantoon Society, and a five year food assistance program to kindergartens, MCH centers, and a nursing school, to be run by the Ministry of Education, are pending but certain of approval. Both programs were proposed to WFP in June 1969 and no objections from Rome are anticipated inasmuch as the FAO Nutrition Advisor to WFP submitted a highly optimistic report on the projects when he visited Kabul in November 1969.

In the latter project, WFP will implement feeding programs in eighteen institutions (14 kindergartens, seven of which are in Kabul, three MCH centers and one nursing school) adding wheat, butter oil, canned fish, cheese, sugar and powdered eggs to the skim milk that UNICEF is supposed to supply. Beneficiaries will include pregnant and lactating women, infants, and preschool children. Mothers receive rations for six months of pregnancy and one year of lactation, children for four and a half years covering the last six months of weaning and the preschool period. A total of 3,415 women and 7,930 children are expected to participate in the program over a period of five years. It will begin with 560 women and 1,300 children in the first year and gradually expand to include 818 women and 1,900 women in the fifth year. The first program is similar in detail except that it is more ambitious in number. One hundred and twelve institutions are involved and a total of 131,682 women and 136,682 children over five years, approximately 44,000 beneficiaries in the

first and 65,000 in the fifth. The 112 institutions include three health centers, six subcenters, three kindergartens,and one rural health center in Kabul; 29 main health centers, 11 subcenters, one kindergarten,and 56 health centers in the provinces.

WFP assumes the cost for the food commodities, freight insurance and superintendance to the border, and has requested $100,000 for its own local supervision. The rest of the costs will be borne by the RGA. In the smaller program this involves $6,500 for the salaries of one project manager, one inspector of storage and handling, and eighteen storekeepers; and $12,000 for unloading, storage, clearance and transport in country. Government expenditure in the Ministry of Public Health program is listed at $88,000 for one project manager, one accountant, two storage inspectors, 122 storekeepers and four guards and $400,000 for unloading, clearance, storage and transport in country.

However, figures for government responsibility are misleading. They do not signify special salary or service allocations for either of the projects, but rather the money already being spent by the government on salaries of various high and minor officials, and funds for vehicles, petrol, storage facilities, etc., that are regularly allocated to all departments of the ministries. In effect the government will be increasing the work-load and responsibilities of the current employees and be using present facilities for storage and transport. Its only real contribution to the programs will be funds to transport commodities from Peshawar to Kabul. The lack of new systems of administration geared to absorb the new WFP programs will add in all likelihood intolerable burdens to the present inadequate facilities of the government and new and greater problems

of supervision and control will inevitably present themselves. As of now, the provincial Directors of Education are responsible for supply and distribution of WFP food in the boarding school programs. These directors have almost complete autonomy and there is little central administration or control by the Ministry of Education, and almost no coordination among the projects in the boarding schools. The only direct supervision takes place when the General Director of the Ministry of Education tours the project sites with the WFP Representative on periodic but still infrequent program inspections and evaluations.

The lack of supervision and controls has occasionally made it possible for boarding school directors to sell WFP commodities on the bazaar and replace them with cheap local substitutes, or with similar but also less expensive canned products from Pakistan. Or these officials have continued to give students only foods budgeted for the boarding school by the Ministry of Education while using the WFP foods as personal property. Such a situation is reputed to have been among the causes of student demonstrations in the Spring of 1969 and the closing of the high schools for three months and the university for nearly six months. The affair began after the students of the Avicenna boarding school in Kabul locked out the administration whom they accused, among other things, of short-changing them on the menu, giving them rotten potatoes and rice and none of the WFP foods. In the University cafeteria, WFP meats are commonly misappropriated despite frequent complaints by the students and "action' taken by both WFP and University officials. Ineffective administrative machinery prevents the Ministry of Education from rectifying the situation. It can do little more except get "tough" occasionally and reprimand or threaten to severly punish

officials responsible for the misuse of the WFP commodities. At present WFP office has only two people who are too overburdened to carry out any effective supervisory measures by themselves. A third full time deputy has arrived from Rome, but even with this additional assistance the most that the present staff can do is to check the stocks whenever large amounts of commodities cannot be accounted for and try to find out who is responsible or to ask friends who are going out to the provinces to check if any WFP foods are appearing in the bazaar. Beyond that they can only ask the ministry to prosecute corrupt officials.

The Kabul office of WFP is too understaffed to offer recipient institutions consistant and regular programs of instruction on how to use the foods properly. As a result, many Afghans sell their tinned meat because they think that it is pork; cheese has found its way to the local market because people have mistaken it for soap; and boxes of powdered eggs were thrown in the river because no one knew how to prepare them. The latter problems have been particularly evident in the food-for-work programs where food is distributed in dry rations to farmers or laborers; WFP, however, has had few difficulties with the wheat, sugar or milk where there are no problems in acceptability or preparation.

WFP has had better success with logistics and central distribution than UNICEF, because the projects have largely been administered by the Ministry of Education or the Ministry of Interior Incoming WFP foods are usually stored in the Teacher's Training Academy warehouse (the former USSR Embassy located in downtown Kabul). From there they are transported with reasonable efficiency to seven central depots in the provincial sites housed in the teacher's training academies which are currently being integrated

into a comprehensive development program of the UN. Now that Rozantoon Society has been appointed to administer the Public Health Institution program new problems may arise for WFP. Hopefully WFP can solve the problems that UNICEF could not and the administrative incorporation of Rozantoon into the Public Health Ministry will improve the situation in warehousing, distribution and supervision. Warehousing space will probably be adequate with the new wing completed, but the questions of administrative responsibilities of the organization involved have still not been solved. Indeed only the President of the Rozantoon Society seems to be aware of the impending program.

The success WFP has had in its previous programs has been due in part to their limited scope and in part, especially in the food-for-work projects, to the presence of foreigners who have been able to help in supervising distribution. WFP appears to be in many ways unprepared for the mother/child food assistance programs. They are, for example unclear as to whom the beneficiaries will be, how many children per mother will be allowed to participate, or how many mothers will be cycled through the programs. They haven't decided on what arrangements will be made for distribution, whether on a weekly, monthly or perhaps daily basis for certain commodities. Indeed, with the possibility of the Department of Nutrition setting up its pilot feeding program at the MCH center in Shewaki, WFP is confused as to what should be the best approach to reaching the recipients. FAO has expressed concern about the mechanics of the distribution when its consultant nutritionist to WFP was in Kabul to discuss the possibility of setting up a seminar for all government workers, who will be involved in the new programs, to work up more effective systems to expedite and control distribution. So far little progress has been

made in convening the seminar, except for securing RGA willingness to cooperate and participate. Although WFP will soon be overburdened it hopes to organize a simple instruction program for cooks and store keepers to give the new program at least a fighting chance.

CHAPTER SEVEN - NUTRITION EDUCATION

I. Past Programs

Nutrition education in the past, has been limited to the attempts, often unsuccessful, of Fulbright home economists to teach nutrition and improve the home economics curriculum in the universities in Kabul and Nangarhar, and to ineffectual and inadequate programs in the girls secondary school home economics programs where nutrition was either neglected or interpreted as a course for preparing rather elaborate meals with sophisticated kitchen equipment. The one-time Home Economics Faculty of Kabul University was demoted to a Department and its present Chairwoman doesn't have any background in nutrition. There are two women in the Department with training in nutrition who have worked as counterparts of the Fulbright instructors but for both of them and their students there is little incentive to work in this field since there are few job opportunities for a home economist either in the secondary schools, which have no curricula, or in hospitals which have so far manifested little interest in upgrading their feeding facilities. The Ministry of Education has had in general, up until the present, little success with its home economics curricula and the syllabus in nutrition. Three have been devised (one by the American Women's Association) for secondary schools, but they were not successful and were soon withdrawn. The faculties of medicine and the nursing schools include some nutrition in their curriculum, usually in the physiology course, but it is treated perfunctorily.

II. Present Programs

Two departments in the Ministry of Education are making considerable headway in the development of a new curriculum in home economics for both male and female primary schools (four through sixth grades) that give the subject of food and nutrition top priority in a syllabus that also includes child care, home management, personal development, and clothing and textiles. One chapter on food and nutrition for the new health textbook for the fifth grade, along with a teacher's guide, has been completed by the Textbook/Curriculum Development Department and the syllabus is being piloted in a number of girls schools in Kabul, Jalalabad,and Kandahar; the teachers receive special in-service training courses given by members of the textbook project. In-service training primarily concentrates on familiarizing local teachers with the new materials and teaching them how to more effectively introduce the material to their students, less through practice than observation of the experts. The teachers do not receive real training in nutrition and are not much better informed than their students. A second project in Practical Arts has developed a scope and sequence for home economics which also places emphasis on food and nutrition. Manuals will be compiled as soon as the basic outlines are given a runthrough in the schools later this year,and their effectiveness evaluated to see whether a syllabus which relies heavily on the initiative and imagination of the teachers as well as the students,can be introduced into the schools. (The practical arts syllabus calls for considerable input from teachers and students, in preparing appropriate visual aids and demonstrations. Grades four and five cover the mechanics of nutrition, preparation and serving of meals and helping mother with simple meals, emphasizing

hygiene, economy,and awareness of nutritious foods; grade six makes an attempt to relate basic nutrition to family health. Both syllabi, textbooks and practical arts training are supposed to be geared to actual social and economic conditions in Afghanistan; they provide generalities with a minimum of American or European prejudices.

The textbook project is being advised by the Columbia team and the practical arts project by specialists from the Columbia team and UNESCO. The UNESCO Advisor is a home economist but not a nutritionist. She would like to see the Ministry of Education devise a special home economics curriculum for all girls in elementary and secondary schools. The advisors are generally aware of the shortcomings of the subject and see the new curriculum as something which is better than nothing. The project is already four years behind schedule. It floundered in extensive discussion on objectives and needs of the children of Afghanistan until it got thoroughly out of hand and AID/Washington started pressing for the books. Now the Ministry of Education is also applying pressure to get the health textbooks into production and distributed,and the Practical Arts scope and sequences turned into manuals before they are tested and their utility as educational material proven. Except for textbook illustrations, little work, other than the convening of a committee or two, has been done on the development of supporting visual aids or equipment (utensils, stoves, etc.) that will be required in the practical arts course. AID/Afghanistan feels that this is the Columbia team's responsibility; UNESCO does not have any known plans to get involved in this area, but the UNESCO expert doubts that the

written materials alone can make much of an impact on habits or customs of the children in the area of food and nutrition. Many feel that the whole effort of the project may turn out to be a halfway measure unless a more coordinated approach is undertaken.

III. Pakthia Development Authority Nutrition Education Project

As part of the PDA's vegetable seedling distribution program (often vegetables not common to Afghanistan) the uthority has developed a comprehensive program that follows the seeds from germination to consumption. A nutrition education program to introduce the new vegetables into the local diet has been devised by the PDA, where village women are taught how to prepare the vegetables so as to preserve nutrients as well as suit local tastes. Village men are persuaded to encourage their wives to cook these vegetables. Seedlings are distributed, free of charge, to local farmers who are urged to plant them in home gardens and use the vegetables for family consumption rather than as produce for local markets. Because Paktia is a poor area and farmers are reluctant to buy foods, especially ones they are not even familiar with, or which they don't usually eat much of anyway, in the bazaar, nutrition improvement programs will have to concentrate on what can be grown at home.

A Deutche Entwickluntung Dienst (DED) (German Volunteer Service) nutritionist and her Afghan counterpart (female) make daily home visits in the rural villages and spend the day demonstrating how vegetables can be cooked using available kitchen facilities. In the town the PDA has opened a shop which distributes cooked vegetables free of charge to any resident of the province so they can taste the results while models of the fresh vegetables are displayed so that the farmers can recognize what they are eating. The home visits were

structured because Paktia is an extremely conservative area and it is difficult to reach many women at a time, many of whom are not allowed to leave their own compounds; the shop was opened because it was felt that a nutrition education program that neglected the men would fail in a society in which women would hardly consider making a change in their household without the active encouragement of their husbands. The program began in July 1969, but did not take off until early this year (1970) with the arrival of the DED nutritionist. It is far too early to evaluate its impact to determine how many of the distributed seedlings actually wind up in the family pot since poor soil and lack of water in the compound for irrigation often decimate the vegetable crops. However, the nutrition team feels that it has had some success in that the village women now eat cooked vegetables that the counterpart prepares. Eventually follow-up visits will be made, but as of the present too small a population has been covered to offer any valid assessment of the program.

CHAPTER EIGHT - ADMINISTRATIVE AND LOGISTICAL CONSIDERATIONS

I. Introduction

Following termination of the school feeding program in 1963, CARE programs have been limited in scale to MEDICO and a few rural self-help activities. The Mission's administrative facilities and systems have been sufficient to control and supervise them. Similarly, logistics have not posed particularly difficult problems, because CARE has been able to use its own warehouse and vehicles to transport various equipment and materials as well as CIK food commodities wherever necessary, both in Kabul and occasionally to the provinces. Where CIK programs have been undertaken, the small number of recipients has made it possible for CARE/Afghanistan to collect the containers of the items, a procedure which has discouraged any attempts at large-scale theft or abuse, . . to program the CIKs directly through American or German Peace Corps Volunteers, or to other foreigners working in development programs who personally supervise their use. In the Avicenna Hospital development project, CARE's main program in Afghanistan, the supervisory role of MEDICO nurses and doctors have helped prevent misappropriations of medical supplies and equipment. Until now CARE/Afghanistan has remained relatively independent of RGA administrative facilities in executing its programs, but the systems now employed will hardly prove sufficient in an expanded nutrition program involving a greater number of recipients scattered more widely around the country. Since one of CARE's principal criteria in carrying out a program is to involve the host country as much as possible, especially in administration, the existing conditions and the capacity of the government to participate will inevitably determine what kind of program CARE undertakes. Afghanistan will present many administrative and

logistic difficulties. These fall into three main categories: 1) geography 2) distribution and 3) personnel or human factor.

II. Location and Climate

1) a. Location - Afghanistan is landlocked. Shipments from overseas have usually come into the country via Karachi, from there to Peshawar by rail and from Peshawar to Kabul by truck, the latter leg of the trip about a seven or eight hour ride if the vehicle is in good condition. Customs formalities do not pose special problems when relations between Afghanistan and Pakistan are good and they have been so since 1964. Alternate overland routes are through Quetta (Pakistan) into Kandahar, the principal southern city in Afghanistan, and through Iran into Herat, the main western urban center. The latter route is rarely used except for oil deliveries from Iran because considerable sections of the roads in Iran and in Turkey are unpaved. All the roads from Pakistan to Kabul are surfaced. A transit agreement with Turkey has been signed and there are some hopes that one may be signed too with Iran. If that does occur and the still incompleted parts of the Asian Highway are finished, it may prove feasible and less expensive to bring in goods by truck through the west. Another possibility, especially for small shipments, is airfreight, using the Ariana DC-6 which carries cargo for Afghanistan.

b. Climate - Afghanistan has a seasonal and temperate climate for its central regions, though the mountainous regions get heavy snowfalls in the winter and are often inaccessible for five months at a stretch. The country in general, however, is divided into two climatic areas--hot and cold. The former comprise low-lying areas in the North and South which are extremely hot in the summer and mild and dry in the winter, and the central plateau regions which have the temperate cold winter climate. The school year and the administration as well as many administrators of government offices follow the climate. Cold areas have school session during the summer and warm areas have school during the winter. Nomads, who form about one-eighth of the population, as well as other groups of peoples, move across the country around the calendar.

III. Roads - An all-weather-road look around the country will soon be completed, linking all the major cities. Branches extend from Kabul to Jalalabad to Peshawar and from Kandahar to Quetta and from Herat to the Iranian and Russian borders. An alternate east-west route from Kabul to Herat has been surveyed but construction will not begin for another few years. The Public Works Ministry has completed an excellent unpaved road from Kabul to Khost in the southern province of Paktia where the PDA is located, which can handle all kinds of traffic in good weather. Particularly dangerous short stretches of other roads have been improved, but, in general, most roads referred to as secondary are primitive, practically nonexistent in the South and Southwest, except

to the center of the Helmand Valley Authority and very hazardous in the northwest of the country. Travel to areas of the main asphalted roads is time consuming and requires a strong vehicle that can be properly taken care of. Scheduled domestic air service is available to many remote places and the planes carry cargo as well as passengers.

IV. Government Vehicles - Numbers are not the problem. The Ministry of Public Health has over 100 vehicles--jeeps, volkswagon buses, small trucks and lorries, the latter made available by contracts with private individuals. The Ministry of Interior has a large fleet of lorries to bring in the edible oil and wheat under a Title I program and twenty to thirty smaller Russian trucks to deliver bread and cakes baked in the government "silo" to various outlets around the city. The Ministry of Education has Russian jeeps for provincial sites as well as Travelalls supplied by the Columbia team and other U.S. contract teams working on special ministry projects, though the latter number has decreased lately because the teams have been phasing out their programs. Vehicles of all kinds are also available from the UN for use in related programs and from the Helmand Valley and Paktia Development Authorities. Ministry vehicles are usually assigned to each department in the ministry by the Technical and Transport offices of the ministries, but any number of vehicles or trucks can be seconded to another department whenever necessary. This system, however, is not particularly efficient and

most departments prefer not to let any cars or trucks out of their sight and to contract with private owners when they need extra vehicles to bring in goods from Peshawar.

The troubles arise in maintenance. Most of the vehicles belonging to the Public Health Ministry are no longer roadworthy. In the provinces most are beyond salvation. Most of the MCH and Basic Health vehicles are not in good running condition; some lie rotting in the courtyards of hospitals and clinics. Each department has a budget for petrol, oil,and maintenance but in many cases cars can't function because it is practically impossible to get funds for the petrol. Cars are run into the ground because the driver can't get Af. 200 for engine oil, though a department will later pay Af. 2,000 to have the vehicle repaired. Through an agreement with the UN, maintenance budgets of the Public Health Ministry epartments have been transferred to the UN workshop and the poor condition of the vehicles has been blamed on the poor service at the workshop. Other ministries rely on their own workshops but maintenance service there also leaves much to be desired. An exception was the now defunct Rural Development Department which generally serviced cars satisfactorily. Even when vehicles are in running order they are rendered useless because drivers can't be found for them, or because they get lost in the bureaucratic complexities of trying to find out what to do with them. This appears to be the case with the three trucks CARE/Afghanistan gave to the

Rural Development Department. They have been lying idle in the Ministry of Public Health courtyard since the RDD was dissolved nine months ago despite efforts to get them transferred to the Department of Nutrition where they coulc be put to immediate use.

V. Storage Facilities - The Ministry of Public Health uses the Rozantoon warehouse, a vermin proof concrete/ brick four story building in downtown Kabul now used to store UNICEF milk and equipment. A second wing is being completed and will be used for WFP foods. The Public Health Institute has adequate vermin proof storage space in its basement. Reorganization of the physical layout of Kabul hospitals could open up more space than is currently available, and hospitals in the provinces, especially the new modern one, have more storage space than they know what to do with. Older hospitals,however, are usually in poor condition with broken windows, cracked floors and walls made of mudbrick,and roofs made with dead limbs and branches of trees so that the rooms are damp in winter and vermin-infested in summer. Most of the storerooms used by the RDD are in similar condition and in many instances worse because the buildings were left empty and unattended for six months until the PHM finally took them over. The Ministry of Education uses the former Russian Embassy, a ramshackle complex of buildings for its main warehouse in Kabul,and the seven Teacher Training Academies for provincial storage sites. The Ministry also has one underground storage facility in Kandahar to

protect WFP foods against the summer heat. Most elementary and secondary schools have spare rooms that could possibly be converted into storerooms, but the buildings are generally old or in poor condition thrcugh a lack of proper maintenance,and therefore susceptible to dampness and havens for vermin. Large corrugated aluminum warehouses have been constructed by the Ministry of Interior in each province to store surplus grain commodities the government buys from the farmers. More such granaries are planned in the near future. The demands already placed upon the limited storage space by current programs, and the planned WFP mother/child food assistance program leave little accommodations for any major bulk input of other programs. The Government, having taken more than four years to complete the Rozantoon warehouse, is unlikely to take immediate action to build new facilities unless their need can be integrated into an overall food and nutrition program for the country where adequate warehousing will be part of a nationwide feeding assistance program. Today, a well run program in which commodities could be efficiently distributed to recipients could make use of the present storage facilities; without, however, rapid distribution there would quickly be gross spoilage.

VI. Personnel, or the Human Factor - Present RGA administrators can usually guarantee that major quantities of goods won't be diverted in routings between Peshawar and Kabul's central warehouses and that they will safely arrive at provincial storage depots. Effective supervision is readily provided by the Ministry of Education and the Rozantoon Society

(for Ministry of Public Health programs) between originating and terminating points in Pakistan and Afghanistan. If losses are discovered officials have a reputation for quickly tracking down the source of diversion and recovering the missing commodities. Most major problems, however, occur either before the RGA assumes responsibility for delivery or after the foods have been delivered to the recipient institution. Especially in the latter instance once delivery has been made administrative control begins to break down, because firstly, accounting and inventory systems have not yet developed to the level where they can be used to insure that proper distribution takes place; and secondly because most programs involving large quantities of food commodities depend on untrained and unqualified administrators. The above, together with the failure to provide explicit instruction as to how distribution facilities should be set up and managed and to clearly distinguish which officials are responsible for the distribution, have created situations which encourages underpaid personnel at these institutions to divert commodities to uses other than legitamately allowed by the donating organization. Until a more effective administrative system is introduced and personnel receive adequate incomes, one will probably continue to encounter widespread resignation to the fact that doctors and nurses as well as school directors and teachers will be economically forced to channel commodities to the public in such a way as to supplement their own meagre salaries, and that the government will be hard pressed to find means of rectifying

this situation.

At the same time, despite their ineffectiveness, accounting and inventory are still emphasised so much that it often is impossible to extricate an item from a storeroom. This is complicated by the fact that warehouse custodians are held responsible for goods in their charge and are obliged to compensate the government for any goods they cannot account for. Although they are seldom guilty of misappropriations, custodians are usually blamed for discrepancies in the stocks and records. As a result, they are extremely reluctant to open up the warehouses or storerooms and release any goods into someone else's jurisdiction even though they may be authorized to disburse the commodities. In many instances this attitude has required direct intervention of department heads and, sometimes, higher ministerial officials to persuade custodians to discharge their responsibilities in accordance with written instruction.

Other difficulties are also present. Rozantoon Society employs three warehouse custodians who have an elaborate ritual of unsealing and sealing the locks whenever anyone is required to enter the warehouse. If all three cannot be assembled for this rite of passage no one gets in and nothing gets out. This applies to officials of RGA, Rozantoon,and nongovernmental agencies. When this is coupled with the difficulties recipient institutions have in simultaneously assembling drivers, vehicles,and funds to purchase petrol, delays in delivery and distribution

can sometimes be interminable. In a situation where little authority is delegated, where department heads are too burdened with trivial work to oversee the administration of their organization, where records usually lack consistency continuity and clarity (with the notable exception of those maintained by the Afghan Family Guidance Association) and are kept by officials who haven't been properly trained in keeping accurate accounts, it would be inadvisable for CARE/Afghanistan to undertake a program now which would necessitate considerable administrative participation by the counterpart agency. This will, however, be possible when there is a sufficient number of middle and upper level personnel who can keep comprehensive records, who see the necessity of keeping them regularly and accurately,and who respect appropriate and effective systems of control. Steps, as mentioned previously, are being taken in this direction. UNICEF has obtained assurances from Rozantoon that policemen will regularly check the bazaar to prevent shopkeepers from selling milk and that shopkeepers will be urged to make a commitment not to sell UNICEF milk. The WFP is considering using a coupon system to regulate the commodity distribution in its mother/child supplemental feeding program. The first effort may prove to be singularly inappropriate and the other will still require constant supervision to make it effective.

CHAPTER NINE - RECOMMENDATIONS AND PROGRAM OPTIONS

I. Introduction

The purpose of this survey and study was to determine the feasibility of the CARE Mission in Afghanistan undertaking an expanded applied nutrition program, and to identify the most appropriate ways to do this. On the basis of the evidenced need of the vulnerable groups of mothers and children, the past experience of CARE/Afghanistan in school feeding, the present status of the UN nutrition programs,and the small potential for significant RGA involvement in and support of any broad-based nutrition programs, the CARE team has concluded that programming will be feasible if CARE/Afghanistan confines its activities for the immediate future to a program that will not require major administrative machinery. Rather than involve itself in a major way in a direct nutrition improvement program, CARE/Afghanistan would be wiser to concentrate on supporting the newly created Department of Nutrition and MCH and the programs it plans to set up to train personnel who will make more far reaching nutrition improvement programs possible.

In making our recommendations, we have attempted to integrate them into an overall program aimed at supporting the projected activities of the Department of Nutrition. The Department gives every impression that it will have a good future. It has already embarked on a number of carefully planned projects and the RGA Ministry of Health has made definite commitments, as far as its budgetary and personnel capabilities permit, to support the epartment's development. However, because of the limited means of the RGA, the Department will require other sources of assistance. It seems logical and fitting, since the Department has worked with CARE from its very inception, for CARE/Afghanistan to continue

this assistance. Excellent relations have been established between the CARE mission and the Department and both have a sympathetic understanding of the necessary requirements for further cooperation in the Department's growth as an effective organization.

These recommendations do not overlook areas where the CARE Mission might work independently of the Department in the development, for example, of nutrition education materials in cooperation with other ministerial departments such as the Visual Aids Department of the Ministry of Education, or by itself, for example, in the programming of certain CIKs such as vitamins, calcium pills, or iron tablets, in MCH or prenatal clinics, etc., which might contribute directly to the improvement of the nutritional status of pregnant, nursing mothers, or preschool children, or in some form of support of American or German peace corps volunteer programs that deal with young children. There are also areas related to nutrition where cooperation with UN Agencies might be feasible and whereby CARE/Afghanistan will be able to mobilize greater resources for the support of the Department of Nutrition's activities and create a more promising atmosphere of cooperation among all organizations working in nutrition related fields.

II. Recommendations

1) Assistance to the Department of Nutrition and MCH

CARE/Afghanistan will need to adopt a flexible approach in supporting the Department of Nutrition so that funds, materials, and personnel can be employed as required among the three major activities of the Department for the next two years at least. These activities are: a) a continuing nutrition survey of the provinces; b) a training program in nutrition for Public Health personnel, and c) a pilot feeding assistance program for MCH

clinics.

a. The Department will require a vehicle capable of withstanding the punishment extensive provincial travel will mete out. Staff doctors conducting the survey will need medications, anthropometic measurement instruments, Food Balance Charts, and other equipment, to undertake a more refined version of the survey CARE implemented and to corroborate results of the questionnaire with clinical and biochemical findings. Secretarial support will also be useful in helping the Department analyze and compile the results, and funds to ensure that the results are published and disseminated will also be necessary.

b. The training program in nutrition will include a rehydration/rehabilitation unit at the Shewaki Training Center and a five bed nutrition ward in Wazir Akbar Khan Hospital which will have to be set up and equipped. Nutrition education will require the production of posters and effective slides and photographs as well as the preparation of carry-back kits for the Public Health personnel participating in the program.

c. The Department of Nutrition will have to design and install economical kitchens and provide standard utensils for child feeding in the pilot MCH feeding program at Shewaki. It will also need height/weight charts for participating mothers and children so that a correlation between an improved diet and child health can be demonstrated.

CARE/Afghanistan's role will be to help the Department of Nutrition meet its material and technical needs which will be more than a limited budget can be expected to cover. CARE's advice in implementing these programs and help in administering them will

also help the Department develop efficient systems of supervision and accounting which can be applied in programs which are set up in Kabul and the provinces.

Cooperation with the Department in nutritional rehabilitation will further provide an excellent opportunity to broaden the MEDICO program and involve it more actively in the field of public health and preventive medicine. MEDICO nurses could be seconded to the rehabilitation center or nutrition ward to train Public Health personnel and visiting specialists could be invited to serve as short-term consultants to various phases of the training program, both in direct teaching capacity and in helping in the organization of the program.

2) Assistance in the Development of Nutrition Education Materials

Relatively good possibilities exist for CARE/Afghanistan to support the development of nutrition education materials for use in MCH, prenatal, and outpatient clinics. Midwives, nurses, doctors, and Family Guidance social workers could be further stimulated to begin or improve education programs for pregnant and nursing mothers if they had appropriate demonstration equipment and relevant posters and pictures to reinforce their instructions. These materials would also be programmed directly into the nutrition courses at the Training Center at Shewaki to teach the participants and to make up the contents of carry-back kits. In this way, materials developed by CARE/Afghanistan would be both effective teaching devices for Public Health personnel and teaching aids to supplement oral instruction given to the women attending the Public Health facilities.

Posters or Charts - There is a definite need for large-sized posters that can easily be understood by illiterate or semi-illiterate women who comprise most of the women who come to MCH or prenatal clinics. More educated women tend to come to the Family Guidance clinics but here, too, posters presently produced by the Health Education Department of the Public Health Ministry are usually too small and obscured by captions to make them sufficiently comprehensible Simple charts by which mothers can keep track of their child's growth and development in height and weight each time they come to a clinic, (wherever scales or tape measures are available) could be used to help make the women understand that proper nutrition habits make for healthy development.

Enlarged Photographs, Slides, Films - These could comprise displays and presentations at the Public Health facilities for mothers and also be used to bring the subject of nutrition and the problems of poor nutrition to men through the schools. Most husbands, sons, brothers-in-law, etc., will have to be given instruction as well in good nutrition in order to give the women the necessary encouragement to put into practice the things they may learn at an MCH or prenatal clinic. Films, slides or photographs of local people with whom villagers,and, in general, the poor, can easily identify will be more effective than the photographs of Indians or Africans supplied by the UN and other organizations, or pictures from American or European magazines which now cover the walls of MCH, prenatal,and Family Guidance clinics.

Demonstration Equipment - This kind of equipment, perhaps dolls, feeding utensils, washing basins, etc., can be used in the clinics to show women how to properly breastfeed, introduce supplementary feeding and keep themselves and their children clean. The latter can be

a way of stressing the importance of sanitation and home hygiene in connection with proper nutrition in keeping children and other members of the family healthy.

In developing these materials CARE/Afghanistan can work with the Visual Aids Department of the Education Ministry which is well equipped for designing and mass production. The main CARE input will be advice and funds, especially the latter, because Visual Aids usually cannot get projects into production phases with the little financial support it receives from the Ministry. Posters and other materials which prove effective can subsequently be reproduced in sufficient quantity for primary schools for girls where nutrition has been included in the curriculum. Seminars can be also set up for primary school teachers during their vacations in conjunction with the Department of Nutrition to instruct the teachers how to use the materials in the practical arts classes.

3) Supplementary Feeding Assistance Programs

There is no doubt that the RGA would be willing to accept as much food as is offered, but there is equally no doubt that it would be hard put to assume the administrative burdens and costs in executing a supplementary feeding program for mother/child or primary school recipients. There would be a natural reluctance for a government, strapped enough as it is for funds, to enter into contracts for programs which would further tax their finances and which would stipulate responsibilities that might not be possible for it to fulfill. Although promises have been made that storage and transportation facilities would be supplied, and that all the necessary control procedures required to prevent abuses in distribution would be instituted, there is little convincing evidence from past or present

food assistance projects to indicate at this stage of development that the government has the resources or energy to fulfill these promises. Until the RGA formulates a comprehensive food and nutrition policy, recognizes that the primary responsibility for executing a well-run feeding assistance program rests with it, and then proceeds to develop competent manpower to execute such programs, CARE will probably face many of the same problems it encountered in its first venture into an applied nutrition program in Afghanistan. Moreover, WFP is on the verge of launching a large-scale mother/child feeding program that will tax the administrative and logistical capacity of the RGA, which has already become inadequate for the UNICEF milk program, so that even one or two commodity inputs from CARE would get lost in what most likely will be a poorly-run and disorganized program.

However, possibilities do exist for some small-scale supplementary feeding assistance programs in: a) the MCH pilot feeding program at Shewaki; b) the rehabilitation center and nutrition ward; and c) the Shamalan Valley Land and People Development project, a new program being contemplated for the Helmand Valley. CARE/Afghanistan along with USAID and Peace Corps has shown interest in this project. Discussions with the HVA are continuing to determine how CARE participation can be made most effective.

a. The pilot feeding program at the Shewaki Training Center will use WFP foods, one of which will be wheat flour. This offers an excellent opportunity for programming a fortified wheat flour supplement to be used in conjunction with the WFP commodity. CARE/Afghanistan has already experimented with WSB in producing a wheat flour blend that can be baked up into a local bread (nan) acceptable to Afghan palates. As soon as the proper composition is determined, the WSB can be programmed into the feeding assistance program at the

Shewaki Center to be used in either dry ration distribution or in preparing nan for consumption at the MCH clinic.

b. CARE/Afghanistan can similarly introduce WSB blended with locally available wheat flour in the rehydration/rehabilitation unit to be established in Shewaki, or more importantly, in the nutrition ward where high protein foods will be required in the treatment of severly malnourished children. The WSB can be used in either nan which the hospital will supply to the children as part of their diet, or in other preparations that can be made from the various foods given to the nutrition ward and cooked under the supervision of the Department of Nutrition.

c. CARE/Afghanistan plans to program wheat flour in the Shamalan Valley project as commodity compensation to farmers while their land remains unproductive during reclamation. CARE's input will, however, be in service of a larger program of community development where mother/child care and nutrition will be stressed. This may include a feeding program using WFP foods, similar to the one planned for Shewaki, and one which could also be administered by the Department of Nutrition. This will allow for the inclusion of a blended WSB-local flour dry ration distribution or direct supplementary feeding at an MCH clinic.

4) Joint Efforts with UN Specialized Agencies and the U.S. Peace Corps

CARE/Afghanistan's interest in nutrition has evoked a strong response in UNICEF and the Peace Corps. Both have expressed willingness, in informal discussions, to cooperate with CARE in various programs in this field.

a. UNICEF

The possibility of working with UNICEF was first brought up in October 1969 when the FAO nutritionist/consultant to WFP visited Kabul to discuss the feasibility of convening a seminar on WFP distribution systems for Afghan officials who will be involved in the expanded WFP program. CARE was approached at that time and invited by the UNICEF representative and FAO consultant to participate in this seminar to improve current distribution machinery as well as to investigate the potential for using this seminar as a first step in a general nutritional improvement program in the country. FAO was concerned that WFP should not become a giveaway program that would diminish RGA incentive to upgrade and increase food production; and UNICEF felt that the ramifications of such a seminar would open up new territories into which it could expand its activities. UNICEF, also, unofficially, promised to make all necessary funds available in this regard to ensure the success of any training or education programs related to nutrition. The seminar has been tentatively scheduled for the winter of 1970 with approval by and promises of support of the RGA. With the inception of the Department of Nutrition and its planned training program at Shewaki, it should be possible to hold the seminar under the auspices of the Department and in that way integrate the discussion of the mechanics of distributing WFP commodities with the rest of the nutrition training program. This could well open up the channel for the infusion of UNICEF funds that the UN agency is looking for. These funds would be a useful supplement to CARE's own assistance and a healthy transfusion wherever more funds are needed. Such an opportunity should not be missed and discussions about a cooperative venture should be further pursued.

b. Peace Corps

CARE has informally assisted Peace Corps volunteers, supplying them with various CIKs and other materials. Further, more formal cooperation was attempted during the CARE survey when we tried to get the female Peace Corps volunteers working in a nation wide smallpox eradication program to implement the CARE questionnaire. However, despite the willingness of the RGA, the Peace Corps, and the volunteers, circumstances beyond anyone's control prevented the girls from conducting the interviews. The favorable impression made on both sides has led to the desire to achieve more coordinated cooperation. Now that the Peace Corps has plans to enter the field of family planning, the Public Health Program Officer has raised the possibility of tying in nutrition to a family planning project and cooperating with CARE in this program. So far specific programs have not been suggested but good possibilities exist in:

1. Using Peace Corps volunteers to train Family Guidance social workers for regular home visits during which they could promote family planning services as well as teach better nutritional practices;

2. Seconding Peace Corps volunteers who may be working in the Community Development program in the Shamalan Valley to the Shewaki nutrition training program (nutritionists and home economists will be among the volunteers selected for the Shamalan project);

3. Using volunteers to help run feeding assistance programs when they are expanded into the provinces;

4. Reviving with Peace Corps assistance the Home Improvement Workers project which was abandoned with the dissolution of the Rural Development Department. The latter was one of the more

imaginative RGA programs and while it lasted it was very successful. Now that Peace Corps nurses regularly do home visiting in their training programs for nurses and midwives, it might prove possible to get the first HIW program on its feet again and start new training programs for more Afghan girls with CARE/Afghanistan assistance. Nutrition would be emphasized in a new program and materials required for teaching women at home the fundamentals of good nutrition supplied by CARE to the Home Improvement Workers. CARE/Afghanistan originally supplied the HIW with basic kits for their home visits.

5) CIKs (Contributions-in-Kind) and Local Purchases

CIKs - The potential for using CIKs has really never been explored in Afghanistan, particularly in distributing vitamin, calcium, and iron pills which can have a tremendous impact on mother/child health, and which are simple to program and small enough (despite large quantities) for the regular CARE/Afghanistan staff to see to it that they reach the intended recipients. Until the present vitamins have mainly been given to Avicenna Hospital, the Maternity Hospital, and the nursing school. Recently they have been given to the Women's Hospital which has a 100 bed children's ward, and at present CARE/Afghanistan is investigating program possibilities of dispensing vitamins to women attending the five prenatal clinics in Kabul. But vitamins are in short supply and this program will have to terminate quickly, even though the vitamins will be doled out sparingly to the mothers who most need them. Because of the high frequency of anemia, osteomalcia, and vitamin deficiency among women and children, a more expanded and regular program of this kind should be introduced in prenatal and MCH clinics as well as in Family Guidance clinics. They will also serve as an excellent incentive to

attract women to come to the clinics and therefore be very useful in providing a continual audience for MCH nutrition and family guidance programs that are to be started in provincial areas.

Local Purchases - These might prove to be an important input in the nutrition ward of Wazir Akbar Khan Hospital if the food budget does not enable the Department of Nutrition to provide an adequate diet for the malnourished children that will be treated in the ward. This will not only affect the diet but might be an equally rewarding experience in devleoping better institutional feeding practices in general for hospitals,as well as demonstrating how limited funds can most effectively be used in obtaining food supplies for institutions.

6) Personnel

To properly carry out a nutrition program in Afghanistan, the CARE Mission will require a permanent Nutrition Project Officer or Coordinator to devote all of his time to maintaining active contact with the Department of Nutrition and any of the other organizations--Peace Corps, UNICEF, Visual Aids Department, etc.--which may become involved in any of the aforementioned projected activities undertaken in support of the Department and allied programs. The work of a Nutrition Project Officer will necessarily have to be aided by a secretarial staff.

To provide guidance in the various phases of the nutrition programs in education, training, or supplementary feeding assistance, the CARE Mission will also require a qualified nutritionist as a consultant on a short-term basis. With the possibilities of cooperating with UNICEF and Peace Corps in the offing, expert advice is likely to be forthcoming from a number of sources. It, however, would be in CARE/Afghanistan's interest to draw on the advice of

someone not only qualified in nutrition, and applied nutrition programming but also someone experienced in CARE programming so that programs are not misdirected into unprofitable areas of endeavor which may adversely affect the development of the Department of Nutrition and a comprehensive food and nutrition policy in Afghanistan and CARE participation in it.

Originally it was contemplated including an Afghan with background in nutrition work in the CARE nutrition program. However, it is now felt that such a person could in many ways be more of a liability than an asset and that Afghans with experience in, or knowledge of, nutrition would probably work more effectively within the official government framework than through the CARE mission. The former procedure will strengthen counterpart relations in the various organizations that CARE/Afghanistan will have to cooperate with in support of the Department of Nutrition and nutrition related activities of other agencies.

Appendix I a

AFGHANISTAN NUTRITION INCENTIVE GRANT

Proposal for Second Phase of Program

First Year of Two-Year Program

I. Proposal Description

To support the activities of the recently-established Department of Nutrition and Mother-Child Health. Activities will include research into the nutritional status of the vulnerable groups of the population, establishment of nutritional rehabilitation facilities, and the development of applied nutrition programs. During the second year of the program, all of these activities will be continued and expanded.

II. Objectives

1) To ensure that the Department of Nutrition will have sufficient financial and material resources to carry out its program plans for the next two years;

2) To stimulate through the activities of the Department of Nutrition greater concern about the problems of malnutrition and active interest in taking effective steps to improve the nutritional status of the population on the part of government officials and professional public health personnel.

3) To help the Department of Nutrition develop an institutional framework for the coordination of government programs related to nutrition and for the effective implementation of nationwide applied nutrition programs.

4) To develop qualified public health personnel, especially nurses and midwives working with young mothers and the mothers of young children, who will serve as the foundation for future applied nutrition programs.

III. Background/Justification

In the last year the RGA has begun to associate the nutritional status of the people with the overall economic and social development programs of the country. Stimulated by the nutritional survey developed by CARE under support from the AID Nutrition Incentive Grant and in response to the growing awareness of the role nutrition plays in national development, the RGA Ministry of Public Health has taken the initiative in establishing a Department of Nutrition and MCH within the Public Health Institute to carry out a research program to determine the nutritional problems and needs of the population and to formulate programs in nutrition education and rehabilitation that can eventually be incorporated into a comprehensive public health program for the country. With the establishment of this institution the basic purpose of the AID Incentive Grant to CARE Afghanistan, i.e., to call attention to nutritional problems and develop initial proposals for dealing with them can be said to have been realized. This proposal is the necessary second phase. This concept was given further support and emphasis during a WHO sponsored nutrition seminar in Beirut attended by the director of the Department of Nutrition in which the necessity for each government to draw up a national policy for food and nutrition was stressed. The proposals of this seminar have been submitted to the RGA and they have been favorably received.

The Department of Nutrition and MCH is receiving administrative and financial support to the extent possible from the Ministry

of Public Health. This support, however, is not adequate to carry out all its projected activities. These include such activities as research training, and applied nutrition programs. Further investigation of the nutritional status of the three most vulnerable population groups -pregnant and lactating mothers and pre-school children--will be undertaken. Preliminary research has justified the growing concern about consequences of inadequate nutrition, especially in the aforementioned most vulnerable sectors of the population. Long term research programs that are being undertaken by the staff of the Department of Nutrition will provide much needed information which can be utilized in the development of appropriate nutrition programs both in education and supplemental feeding.

In conjunction with the program of nutrition research, the Department of Nutrition will inaugurate a two month nutrition course at the Public Health Training Center in Shewaki. Participant doctors, nurses, midwives, and sanitarians will receive background instruction in nutritional research, nutritional rehabilitation, nutrition education, and food assistance programs. UN and other experts will be asked to participate and act as consultants to various phases of the training program.

The curriculum for the participants will be divided into four areas:

A. Seminars and lectures on the epidemiology of nutrition;

B. Practical experiance in the treatment of primary and secondary malnutrition at a rehydration center to be established at the

MCH clinic in Shewaki and in treatment for severe cases of malnutrition at a five bed nutrition ward that will be opened in Wazir Akbar Khan Hospital to be supervised by the staff of the Department of Nutrition;

C. Participation in a mother/child feeding program that will be run at the Shewaki MCH center with the center to be used as a model for similar supplemental feeding programs in other parts of the country;

D. Methods of nutrition education with participants w[illegible] being given carryback kits containing visual aids and other education materials in order to begin elementary nutrition education programs in MCH clinics, prenatal clinics, and hospital polyclinics.

Supplemental MCH feeding programs, based on the experiences gained in the pilot MCH program at Shewaki, will be developed where possible throughout the country.

IV. Administration of Funds

Funds for this program will be administered by CARE-Afghanistan in accordance with AID guidelines.

V. Administration of Program

Administrative procedures will have to be flexible. The research program will be administered jointly by the Department of Nutrition and CARE-Afghanistan. The Department of Nutrition and CARE-Afghanistan will be involved primarily with the areas of the training course devoted or related to nutrition but will

have to integrate these programs into the general structure of the Shewaki Training Center which will be administered by the Public Health Ministry through the Training Institute of the Public Health Institute in conjunction with UNICEF and WHO. At this level administration will be complicated by the various organisations working at the center but the Training Institute will serve as general liaison and coordinator of the programs. CARE-Afghanistan will also work separately with other institutions to develop visual aids, educational materials, carryback kits, and special equipment that will be needed in the supplemental feeding programs. This will entail short term projects that will be administered jointly by CARE-Afghanistan where a Government Department such as the Visual Aids Center is involved. The utilisation of nutritional materials developed by CARE-Afghanistan will be administered jointly by CARE and the Department of Nutrition.

General administration of the programs will fall to the Department of Nutrition and the Training Institute in the selection of participants and in the organisation of the entire training program. CARE-Afghanistan will concern itself mainly with the effective use of funds in developing and supplying materials and equipment and with the support and development of specific program areas such as nutrition education, supplemental feeding and research. CARE-Afghanistan will also provide wherever possible continuous evaluation of the different programs.

VI. Implementation of the Program

The program will be implemented in three segments: research, setting up facilities for the practical phases of the nutrition training program, and development of nutritional education materials.

A. CARE-Afghanistan will continue to assist the Department of Nutrition in its provincial/rural research program into the nutritional status of pregnant and nursing mothers and pre-school children. Such assistance will include transportation facilities, office equipment for production of questionnaires, certain anthropomentric measuring instruments to facilitate clinical study, support for secretarial assistance to expedite the analyses of the results of the questionnaires and the clinical and biochemical phases of the research, and publication and dissemination of these results.

B. CARE-Afghanistan will provide the necessary equipment for the planned nutrition rehydration clinic at Shewaki and the five bed nutrition ward. In cooperation with the Department of Nutrition it will also work on the development of sanitary, efficient and economical kitchen equipment and standard infant/pre-school child utensils to be used in child feeding programs. In view of the interest expressed by UNICEF in such programs further funds for the mass reproduction of equipment might be expected from this quarter to facilitate the expansion of the program into the provinces if that proves possible before the second phase incentive grant ends.

C. CARE-Afghanistan will contract with the Visual Aids Center of the Ministry of Education to develop posters and other visual aids for use in MCH and other mother/child health installations. A height/weight chart suitable for use in Afghanistan will be prepared so that it can be used in the feeding programs at the MCH center to impress mothers with the value of good food in the growth and development of their children. CARE-Afghanistan will also supply films, slides and projection equipment for use in the nutrition training program.

The research program which has been going on since January 1970 will continue for at least three years until sufficient data is collected about all the provinces. However, there will be a continuous return of information that will allow for periodic evaluation of the effectiveness of the methods being used and the compilation and dissemination of the results so as they can be utilized in the development of nutrition education materials and the designing of appropriate supplemental feeding programs.

The first training program will begin in the summer-fall of 1970 and run for eight weeks. Subsequent programs will be held initially every six months: in the summer for public health personnel from warm areas of the country; and in winter for participants coming from cold areas of the country. Participants

will be invited on the basis of competence; usually 30 per training program. The Department of Nutrition will make periodic visits to the participants' site to evaluate the impact of the training program and to provide continuity in nutrition education between the Shewaki center and the various MCH and other health facilities. Development of materials will begin as soon as the second phase of the incentive grant is approved. CARE-Afghanistan has had experience in the development of education materials and carryback kits in conjunction with the Visual Aids Center and it plans to have the first materials ready for distribution by the time the first training course is over.

AFGHANISTAN: NUTRITION EDUCATION INCENTIVE GRANT PROJECT

Plan of Action of the Public Health Institute's Department of Nutrition

It is clear that nutrition plays an important role in social and economic development and that malnutrition is a main factor in the improper development of children with regard to their physical and intellectual growth. Therefore, in order to prevent such adverse effects from occurring, it is necessary to draw up an effective nutrition program for children and mothers. On the same count it is necessary to formulate a national food and nutrition policy, under which related governmental departments acting under a High Council for Food and Nutrition can achieve their practical goals as quickly as possible.

1- A national food policy to secure the improvement of the nutritional status of people through the country embraces two purposes:

a- food production to meet the needs of the people and insure self-sufficiency,

b- systems for the distribution and utilization of various food commodities to bring about better nutrition conditions.

This requires a number of activities such as surveys to determine the nutritional status of the people, and the preparation of Food Balance Charts to determine the amounts of food people consume and produce on the basis of which an effective food policy can be drawn up and useful programs can be implemented.

Steps should be taken to train technical personnel to conduct surveys and implement food programs, to raise agricultural production and propagate high protein foods, and to set up systems for the sale, distribution, import and export of food products and for the control of the quality and prices of food products. Special attention should be paid to food technology, food fortification and to food preservation.

Programs should also be drawn up for nutrition education in the schools, using visual aids and printed materials.

To improve the health of vulnerable groups such as young children and mothers nutrition programs should be carried on together with preventive medicine programs against contagious and endemic diseases. Mothers should be made aware that breastfeeding should be limited to four months after which supplementary feeding should be introduced. Practical measures should be adopted to establish centers for rehabilitation (through feeding and

medication) of victims of malnutrition. Feeding programs should be started and expanded to all parts of the country and effective steps should be taken to improve health conditions among the people by proper distribution and control of food.

Nutrition surveys should be carried out so that ways of implementing practical programs can be determined. On the basis of the last point, a Department of Nutrition in the Public Health Institute has been established to carry out such a program in 1970 and in successive years.

The Department of Nutrition has the following personnel for 1970 to carry out its program: two doctors, two nurses, one secretary/typist plus two seconded administrative personnel.

The Department of Nutrition is hopeful that with the cooperation of CARE/Medico it can carry out the following programs:

1- In order to determine the nutritional status of the people and prepare Food Balance Charts to determine the amount of food people consume and produce, surveys will be carried out in provincial centers and rural areas. For this survey one doctor will work on the survey in the provinces and another doctor will work on the survey in the vicinity of Kabul.

2- The above surveys by clinical and questionnaire method will use the laboratory facilities of the Public Health Institute to assist in determining the prevailing types of nutrition diseases and methods of curing them.

3- Steps will also be taken to train personnel. In the summer of 1970 an intensive two month course for MCH doctors and nurses, midwives and other health personnel as well as teachers engaged in teaching home economics and nutrition will open in Shewaki. This course will acquaint the participants with procedures for nutrition surveys and applied nutrition programs. Similar programs will be held in other parts of the country.

4- Nutrition education will also be considered in order to implement nutrition education programs in cooperation with MCH centers, Family Guidance clinics, women's volunteer societies and health centers around the country. Such nutrition education programs will work in cooperation with the Education Department of the Public Health Institute. Similar efforts will also be made to introduce nutrition education in schools.

The Department of Nutrition is hopeful that it will be able to cooperate with the Red Crescent Society on the special occasions when the latter distributes food commodities. It will also participate in regional nutrition seminars for health workers,

sanitarians and health inspectors, so that better and more effective nutrition programs can be implemented.

It also plans to open an MCH and nutrition clinic in Shewaki to treat cases of malnutrition. In this clinic cases of malnutrition will be examined and necessary treatment will be given. A rehabilitation center for victims of malnutrition will also be opened which will employ new methods of treatment. It is also hoped that a five-bed nutrition ward in Wazir Akbar Khan Hospital will be established for patients requiring continuous care and treatment. This ward will be run by nutrition experts and rehabilitation treatment will be provided. Both the clinic and ward will be used for practical training by the participants in the Shewaki training course.

At the aforementioned clinic a feeding program will also be carried out in order to give participants in the training course experience with which to implement similar programs in other health centers, MCH clinics, etc.

Because the nutrition programs are primarily important for pregnant and lactating mothers and pre-school children, the success of these programs will depend upon the cooperation of the MCH clinics and the Family Guidance centers. Therefore, the Department of Nutrition of the PHI hopes that the authorities of the Public Health Ministry will permit it to function as advisor to MCH and Family Guidance in matters of nutrition and to carry out its programs in these organizations without any obstacles. It is hoped that the Ministry of Public Health will instruct the Department of MCH and the Basic Health Centers not to hesitate to cooperate with the Department of Nutrition and to provide all facilities for carrying out nutrition programs and that all questionnaires drawn up by the Department of Nutrition will be implemented and returned to the department on time.

In regard to the interest CARE/Medico has shown in nutrition and in supporting the Department of Nutrition, the following proposals are presented to the Ministry of Public Health to secure the continuous assistance and cooperation of CARE/Medico:

1- In order to carry out food and nutrition surveys, the following proposals for assistance from CARE/Medico are submitted from the Department of Nutrition:

   a- vehicles for survey teams,

   b- one nutritionist,

   c- equipment for anthropometric measurements,

   d- equipment for clinical examinations,

e- one public health nurse (note: a detailed list of anthropometric measuring devices and medical equipment will be submitted later).

2- In order to set up courses and seminars in nutrition education and for the training of personnel, the following assistance is requested:

a- one vehicle for transportating education and publicity materials,

b- one food technologist,

c- one expert in nutrition education or applied nutrition programming,

d- equipment for nutrition and publicity such as projectors, generators, films, etc.,

e- one short-term consultant for the training course at Shewaki,

f- one typist/secretary.

3- For the rehabilitation center the following assistance is requested:

a- necessary food commodities,

b- five beds for the nutrition ward,

c- kitchen facilities to prepare food for patients,

d- bottles for saline solutions and sterilizing equipment,

e- one ambulance to transport patients and medical personnel from Shewaki to the nutrition ward.

4- In order to implement nutrition programs in the basic health centers the following assistance is requested:

a- building and transport facilities, well digging units, facilities to build hygenic latrines,

b- food commodities for nutrition feeding programs,

c- safe drinking water supply systems for basic health centers,

d- facilities to fight flies and disease carrying insects,

e- facilities to expand vaccination programs against diphtheria, whooping cough and tuberculosis.

5- In order to implement a goiter program in the north and northeastern areas of the country where two million people suffer from goiter, it is proposed that CARE/Medico assist in setting up a salt iodization plant.

THE DEVELOPMENT OF A NATIONAL NUTRITION POLICY FOR AFGHANISTAN

NATIONAL HIGH COUNCIL FOR FOOD AND NUTRITION

In order to formulate a national policy for food and nutrition as part of an overall national development program, plans are underway to establish an interministerial National High Council for Food and Nutrition. High ranking officials of the ministries of Health, Education, Planning, Agriculture and Irrigation, Commerce and other ministries whose activities may prove relevant to food and nutrition as well as experts in nutrition, food technology and food chemistry will comprise the Council. The primary objectives of the members of this council will be to set policies and recommend the implementation of programs which will make the country self-sufficient in food production and at the same time improve the nutritional status of the people. The Council will function as a coordinating agency for all public and private sector activities related to the production, utilisation and distribution of food. It will draw up policies to ensure qualitative as well as quantitative development in agricultural production, effective use of agricultural products in food consumption and industry, and the creation of systems that will protect the consumer and enable the government to carry out well-run food assistance and emergency food relief program.

DEPARTMENTS OF NUTRITION IN CONCERNED MINISTRIES

The nation food and nutrition policies will be implemented by the concerned ministries through departments of nutrition that they will establish. In order to facilitate the establishment of such nutrition departments, representatives of the above mentioned ministries will attend special UN sponsored courses at the American University of Beirut to receive orientation in the formulation of food and nutrition policy. This orientation will serve as the nucleus for the development of departments of nutrition that will plan and execute nutrition programs for the ministries.

THE PUBLIC HEALTH INSTITUTE'S DEPARTMENT OF NUTRITION AND MCH

As of the moment a Department of Nutrition and MCH has been established in the Public Health Institute. This department will serve as an overall advisory organization making available to the National High Council for Food and Nutrition through its research and rehabilitation programs the relevant data upon which the Council can prepare meaningful policies. It will also assist the various ministerial nutrition departments in their development and programming. In this regard it will set up requirements for healthy diets, determine treatment for people suffering from malnutrition and recommend feeding programs to correct nutritional imbalances and deficiencies.

WORK PLANS AND GOALS OF THE DEPARTMENT OF NUTRITION

Budget

A budget for the Department of Nutrition has been approved by the Ministry of Public Health to cover expenses for the salaries of an initial staff of two medical doctors, one nurse (who will be male but efforts will be made to secure a female nurse) and one laboratory technician or secretary. It may, however, be possible to hire both through funds obtained from the adjustment of other salaries against civil service rank and ministry position

An operational budget for the Department's activities will be obtained from the budget of the Public Health Institute's budget to meet expenses for medical, chemical and office supplies and to cover transportation costs in Kabul city and the provinces.

Planned Activities

1) Surveys: Activity in the Department will commence at the end of March. Work will continue on the current nutritional status survey in the provinces and a clinical survey on special nutritional diseases will be launched. Dr. Enajatullah Naweed will lead the first survey and a female physician trained in nutrition by the PHI will be responsible for conducting the clinical survey within a 60 kilometre radius of Kabul. The continuation of the nutritional status survey will be directed towards gathering the necessary information on which the government can base its national policy on food and nutrition. It will concentrate mainly on pregnant and lactating mothers and preschool children and is expected to take at least three years to complete. The second survey will be oriented toward the curative aspect of malnutrition and the results will be used in developing rehabilitation programs for victims of malnutrition, in helping in the treatment of nutritional diseases at MCH clinics and in determining specific training for MCH and other public health personnel.

2) Training: In the summer of 1970 the PHI will inaugurate an In-Service Training Center at the former Rural Development Department center at Shewaki, located 15 kilometres south of Kabul. Allocations for the budget of the health facilities at Shewaki may be turned over to the PHI to be used in the training program. Trainees will be drawn from MCH, AFGA centers and from hospitals and will include doctors, nurses, midwives and other health personnel. The first group will come from Kabul; later participants will be invited from the provinces. The center will provide eight weeks of intensive training in various fields of public health. Nutrition will be incorporated into the training and emphasized. The nutrition training will cover the epidemiology of nutritional diseases, nutrition education, nutrition programs and methods of applied nutrition programming.

Emphasis will be placed on the preventive aspect of nutrition but pediatricians, for example, will also focus on its curative aspects.

The training will be practical as well as academic. The Shewaki polyclinic and MCH center will permit trainees to get experience in familiarizing themselves with the signs of various kinds of malnutrition and in initiating programs to prevent malnutrition. A five bed nutrition ward at Wazir Akbar Khan Hospital run under the supervision of the Department of Nutrition will also enable trainees to learn the proper treatment and rehabilitation of cases of malnutrition. Patients will be selected from the Shewaki polyclinic and admitted free of charge to the ward. Expenses for feeding and rehabilitation will come from the hospital's budget.

3) Feeding Programs: The Department of Nutrition is considering implementing a pilot feeding program at the MCH center in Shewaki, to serve as a model for introducing similar feeding programs at MCH centers in Kabul and the provinces. This program will be run in conjunction with the In-Service Training Program. MCH personnel working at the center will be taught to prepare and distribute cooked meals to the mothers and pre-school children and to coordinate the feeding with elementary nutrition education. The program will aim at showing mothers the immediate improvement of the child's health through proper feeding and the long-range benefits of good nutrition in the child's growth and development. Mothers will also be taught how to prepare similar meals at home and how to feed their children. Trainees will participate in the feeding program in order to obtain practical experience in running similar programs in their own health institutions. The program will also train related personnel in correct methods of storage, distribution and program administration.

The Department of Nutrition also has plans to train personnel from other ministries in the planning and administration of feeding programs. Members of the Ministry of Education will also be invited to the In-Service Training Center to study methods of running organized and efficient feeding programs in primary schools and other education institutions. In this regard the Department of Nutrition will assist the Health Department of the Ministry of Education in conducting surveys to determine the nutritional status of school children and types of malnutrition diseases prevalent among them in order to ensure that feeding programs meet the nutritional needs of the students.

4) Cooperation with MCH and AFGA: The Department of Nutrition will serve as advisor to MCH centers throughout the country. On the basis of nutritional status and clinical surveys conducted among the women and children attending these centers, it will recommend to physicians, and nurses what treatment, education and preventive measures should be carried out to cure endemic and seasonal nutritional problems and to improve the nutritional status of the pregnant and lactating mothers and pre-school children.

The Department similarly hopes to relate its programs in surveys, feeding and education to the Afghan Family Guidance Association whose goals complement those of the Department's and whose activities are directly related to improving the nutritional status of women and children.

5) Education: A major objective of the Department of Nutrition will be nutrition education and the development of education aids for this purpose. Nutrition education will be planned for mothers attending MCH clinics, AFGA centers, prenatal clinics and other public health facilities as well as for children in school. The Department of Nutrition will study what kinds of instruction should be given to pregnant and lactating mothers and mothers with young children and what kinds of education aids should be prepared to supplement such instruction for long-term impact. It will also seek the assistance of the PHI's Health Education Department and the Visual Aids Department of the Ministry of Education in the preparation of required materials. In the development of a syllabus for nutrition education for school children by the Ministry of Education, the Department of Nutrition will help evaluate curriculum and other programs and advise the Ministry as to how they can be made more effective and relevant to conditions of the country.

6) Seminars: The Department of Nutrition will hold periodic regional seminars for personnel trained at the Shewaki center as well as for other personnel working in health and education in order to continually improve programs related to nutrition.

COOPERATION WITH WELFARE ORGANIZATIONS

The Department of Nutrition will also cooperate with welfare organizations such as the Red Crescent and the Women's Society in emergency food relief programs and other nutrition or food assistance programs.

SANITATION AND ENVIRONMENTAL HYGIENE

Admission requirements for a course for sanitarians (public health personnel who work in environmental hygiene) given at the PHI will be raised from 9th to 12th grade graduates. Nutrition will be added to the curriculum that will take two years of academic and six months of practical training at Shewaki to complete. The syllabus for the course will be based on recommendations of 1967 WHO seminar. Female students are expected to be enrolled for the first time.

SPECIAL PROJECTS

The Department of Nutrition will also work on special nutrition problems that exist in the country, such as goiter control. In efforts to correct iodine deficiency in a significant portion of

the northeastern population it will study the feasibility of setting up a salt iodization plant and ways of ensuring effective distribution of iodized salt to the people in that region. Similar consideration will be given to other regional problems as they are brought to the attention of the Department through the results of clinical surveys.

PROCEDURES FOR IMPLEMENTING THE QUESTIONNAIRE

The following questionnaire is designed to be used with women who have one or more children. The interviewer should try to establish a friendly and relaxed relationship during the interview, and to put the woman at her ease in order to gain her confidence and cooperation. Reassure her that the questionnaire has nothing to do with taxation or any kind of law enforcement, but that the information collected will be useful in helping to show what people's needs are so that they may be better met.

Remember that the questionnaire is not intended as a teaching device but only for information gathering. No comments should be made on the answers, and they should not be judged right or wrong, good or bad. If a statement seems to be based on fantasy, or a wish to please the interviewer, rather than on actual facts, then an effort should be made to elicit a true and spontaneous answer to the question However, it is no use pushing a question if it causes anxiety or embarrassment. Make a note to the effect that there is a block at this point and go on to the next question. If an interviewee balks at many of the questions or gives unintelligible or contradictory answers, it may be best to drop the interview without wasting further time on it.

The interviewer should avoid giving the impression that the questionnaire is an examination, or a measure of the amount of acceptable information acquired and retained by the interviewee. We are not trying to find out if she knows how she ought to feed her child, but what she actually does, right or wrong. It is therefore better to conduct these interviews before any attampt is made to begin nutrition education in classes. It may also be better to play down the fact that the interviewer is marking down the answers given; if the woman being questioned becomes apprehensive about giving the correct or approved answer (rather than just a true one) the information given may be far from the truth. Keep the interview conversational and mark the answers later.

Part I of the questionnaire should be filled in by the person conducting the interview on the basis of the information he possesses or can obtain about the locality, town, or village of the interviewee. The person conducting the interview should try to supply information which is accurate.

Part II of the questionnaire should be completed on the basis of an interview with a pregnant or nursing mother or mother with a young child. Two public health personnel should conduct the interview, one asking the questions, the other writing the answers down in such a way as not to frighten the women.

Wherever possible, the person writing down the answers should mark a (+) if the answer is positive and a (-) if the answer is negative or if the woman cannot answer or refuses to answer a question. Where longer answers are given or required, the person writing down the answers should note these answers in detail.

I. Brief description of area in which a group of interviews is conducted.*

(Background Questions for Survey Interviewers)

1. Geographic features; e.g., mountain, desert, fertile valley, arid, irrigated, etc.

2. Population of village or town and estimated population density of area.

3. Ethnic/cultural factors; e.g., language, religion, polygamy, etc.

4. Is community monetized, wholly or in part? Are males engaged in subsistence farming, paid labor, share cropping, etc.? What is estimated income?

5. Health and sanitation facilities in community: hospitals, doctor, nurses, clinics, child care centers, etc., drinking water (juie, well, river, pipe); latrine facilities.

6. Educational facilities in community: village school, primary school, adult literacy programs.

*(This need only be done once for the area group).

II. Individual Nutrition Survey Questionnaire

1. Identification: name, village, province.

2. How many people in the household?

   a. Adults (over 15)
   b. Children (under 15)

3. How many in the household

   a. Have attended school
   b. Are now attending
   c. Have completed 6th grade

4. a. How many live children have you borne?
      (Do not include miscarriage or stillbirth)
   b. How many of your children are now living?
   c. Who helped in the delivery?
   d. What did the other children die of?
   e. Did any die of swelling of the body?
   f. Did you ever lose a baby before full term?

5. Height/weight/age of this child. (This child meaning the child she has delivered in the hospital, or has brought to the MCH clinic, or is looking after during the interviewer's house visit, whichever is applicable).

6. Duration of breast feeding

   a. This child
   b. Previous child

7. Why did you stop nursing

   a. This child, if applicable, or
   b. Previous child

   Was it because

   c. You became pregnant again
   d. You gave birth to another baby
   e. You didn't have enough milk
   f. Sickness of the baby or yourself
   g. Other reason, such as separation of family, need to go to work, etc.

II. Individual Nutrition Survey Questionnaire (cont'd)

8. Did you stop nursing

   a. Suddenly, or
   b. Gradually
   c. Did the baby remain happy and healthy during weaning; i.e., did it cry a lot, become thinner, suffer from diarrhea or vomiting?

9. a. When you were pregnant, did you eat well, more than the other (non-pregnant) women in the household?
   b. Were you ever short of food during your pregnancy?

10. While you were nursing did you

   a. Eat well, more than the other women, as much as your husband?
   b. Did you have plenty of breast-milk to satisfy the child?
   c. For how many months?

11. a. Do you give additional food to the breast fed baby?
   b. What foods do you give?
   c. How much?
   d. At what age did you begin giving additional food?

12. When the child no longer receives breast-milk, what does he eat?

13. a. Does the child eat from the family bowl? or
   b. Do you put aside his own portion for him, or
   c. Do you cook some food especially for him?

14. a. What kind of stove do you use for cooking?
   b. What kind of pots and pans?
   c. Do you have a special pan for cooking food for the child?
   d. Do you have a special cup or bowl for the child's portion of food?
   e. Do you help the child to eat all his food?

15. Estimate of 24 hour <u>family</u> menu:
   What did you eat

   a. Yesterday noon
   b. Last night
   c. This morning?

16. a. Is this what you would usually eat at home?
   b. Would you have different foods at another time of year? (Note seasonal modifications if possible).

APPENDIX II c

Original Copy of Questionnaire Devised by CARE Nutritionist

The following questionnaire is designed to be used with women who have one or more children. The interviewer should try to establish a friendly and relaxed relationship during the interview, and to put the woman at her ease in order to gain her confidence and cooperation. Reassure her that the questionnaire has nothing to do with taxation or any kind of law enforcement, but that the information collected will be useful in helping to show what people's needs are so that they may be better met.

Remember that the questionnaire is not intended as a teaching device but only for information gathering. No comments should be made on the answers, and they should not be judged right or wrong, good or bad. If a statement seems to be based on fantasy, or a wish to please the interviewer, rather than on actual facts, then an effort should be made to elicit a true and spontaneous answer to the question. However, it is no use pushing a question if it causes anxiety or embarrassment. Make a note to the effect that there is a block at this point and go on to the next question. If an interviewee balks at many of the questions or gives unintelligible or contradictory answers, it may be best to drop the interview without wasting further time on it.

The interviewer should avoid giving the impression that the questionnaire is an examination, or a measure of the amount of acceptable information acquired and retained by the interviewee. We are not trying to find out if she knows how she ought to feed her child, but what she actually does, right or wrong. It is therefore better to conduct these interviews before any attempt is made to begin nutrition education in classes. It may also be better to play down the fact that the interviewer is marking down the answers given; if the woman being questioned becomes apprehensive about giving the correct or approved answer (rather than just a true one) the information given may be far from the truth. Keep the interview conversational and mark the answers later.

I. Brief description of area in which a group of interviews is conducted.*

1. Geographic features e.g. mountain, desert, fertile valley, arid, irrigated, etc.

2. Population of village or town and estimated population density of area.

3. Ethnic/cultural factors, e.g., language, religion, polygamy, etc.

4. Is community monetized, wholly or in part? Are males engaged in subsistence farming, paid labor, share cropping, etc.? What is estimated income?

5. Health facilities in community: hospitals, doctor, nurses, clinics, child care centers, etc.

6. Educational facilities in community: village school, primary school, adult literacy programs.

* (This need only be done once for the area group.)

II. Individual Questionnaire

1. Identification: name, village, province.

2. How many people in the household?

   a. Adults (over 15)
   b. Children (under 15)

3. How many in the household

   a. Have attended school
   b. Are now attending
   c. Have completed 6th grade

4. a. How many live children have you home?
      (Do not include miscarriage or stillbirth)
   b. How many of your children are now living?
   c. Did you ever lose a baby before full term?

5. Height/weight/age of this child. (This child meaning the child she has delivered in the hospital, or has brought to the MCH clinic, or is looking after during the interviewer's house visit, whichever is applicable).

6. Duration of breastfeeding
   a. This child
   b. Previous child.

7. Why did you stop nursing

   a. This child, if applicable, or
   b. Previous child

   Was it because

   c. You became pregnant again
   d. You gave birth to another baby
   e. You didn't have enough milk
   f. Sickness of the baby or yourself
   g. Other reason, such as separation of family, need to go to work, etc.

8. Did you stop nursing

   a. Suddenly or
   b. Gradually
   c. Did the baby remain happy & healthy during weaning, i.e., did it cry a lot, become thinner, suffer from diarrhea or vomiting?

9. When you were pregnant, did you eat well, more than the other (non-pregnant) women in the household? Were you ever short of food during your pregnancy?

10. While you were nursing did you

    a. Eat well, more than the other women, as much as your husband?
    b. Did you have plenty of breast-milk to satisfy the child?
    c. For how many months?

11. a. Do you give additional food to the breast fed baby?
    b. What foods do you give?
    c. How much?
    d. At what age did you begin giving additionall food?

12. When the child no longer receives breastmilk, what does he eat?

13. a. Does the child eat from the family bowl? or
    b. Do you put aside his own portion for him, or
    c. Do you cook some food especially for him?

14. a. What kind of stove do you use for cooking?
    b. What kind of pots and pans?
    c. Do you have a special pan for cooking food for the child?
    d. Do you have a special cup or bowl for the child's portion of food?
    e. Do you help the child to eat all his food?

15. Estimate of 24 hour <u>family</u> menu:
What did you eat

a. Yesterday noon
b. Last night
c. This morning?

16. a. Is this what you would usually eat at home?
b. Would you have different foods at another time of year?
(Note seasonal modifications if possible.)

17. Do all members of the household get all of these foods, i.e., adults and children, males and females?

18. a. Do you eat with your husband, or does he eat with the other men?
b. Do the children eat with you or with the men?
c. At what age do boys begin eating with the men?

19. Where do you get the food you prepare for your household

a. From the bazaar
b. From your own fields, garden or farm
c. In other ways

20. Do you own a cow, goats, sheep, or chickens? Do you use the milk, eggs and meat in feeding your family? How much milk, how many eggs, do you use each day? For how many people? Children or adults?

21. Are there any foods, beverages or remedies which you believe are especially healthful and auspicious for

a. A pregnant mother
b. Nursing mother
c. Breastfed child
d. Weaning child approximately 6 months to 2 years
e. Fully weaned child, approximately 2-5 years?

Identify for each group.

22. Are there any foods or beverages which you think are bad or inappropriate for the 5 groups listed above? Identify for each group.

23. From where did you get these ideas about feeding; from relations, friends or teachers? Do you think it is good teaching? Has it kept your family healthy? Would you like to learn more about good food, so that your children would have a better chance of being big and strong?

Appendix II-d

Questionnaire for Rozantoon Society MCH Centers to determine extent and Nature of malnutrition among nursing mothers and children

1. MCH Center location

2. Attendance of mothers (total)

   a. in 1346
   b. in 1347
   c. in 1348 (up to the present month)

3. Attendance of children (total)

   a. in 1346
   b. in 1347
   c. in 1348 (up to the present)

   (If information is not available for above years, data might be obtained over the next three months through cooperation of doctor and nurses at Center.)

4. Indications and extent of malnutrition or undernourishment in mothers

   a. nutritional deficiencies most frequently observed
   b. number of mothers showing signs of malnutrition
   c. number of cases of each kind of nutritional deficiency

      (1) osteomalitis
      (2) anemia
      (3) avitaminosis
      (4) etc.

   d. What percentage of women continue breast feeding until

      (1) 1 year
      (2) 1-1/2 years
      (3) 2 years
      (4) 3 years or more

   e. What percentage of these women do not have an adequate supply of breast milk

5. Indications and extent of malnutrition or undernourishment in children

   a. nutritional deficiencies most frequently observed (include seasonal variations)
   b. number of children showing signs of malnutrition
   c. number of cases of each kind of nutritional deficiency or symptom of malnourishment

      (1) anemia
      (2) avitaminosis
      (3) underweight
      (4) etc.

d. Age/weight/height

(1) How many children of 6-months are below normal weight/height
(a) average below normal weight/height

(2) number of children of 1 year below normal weight/height
(a) average below normal weight/height

(3) number of children of 1-1/2 years below normal weight/height
(a) average below normal weight/height

(4) number of children of 2 years below normal weight/height
(a) average below normal weight/height

(5) number of children of 3 years below normal weight/height
(a) average below normal weight/height

6. Number or percentage of children receiving supplementary feeding at

a. 1 year
b. 1-1/2 years
c. 2 years
d. 3 years or older

7. Where supplementation is given what supplementary foods do infants receive at

a. 1 year
b. 1-1/2 years
c. 2 years
d. 3 years or older

8. Foods given after children are weaned (note ages of weaning)

9. Does the center now distribute any food supplements to

a. nursing mothers
b. partially or completely weaned children

10. If yes

a. Where are the supplements obtained and in what quantities
b. How long has the Center been distributing them
c. What kinds of supplements are distributed
d. How are the supplements distributed (frequency, quantity, preparation)
e. What personnel and facilities are involved in distribution

11. If no

    a. When did the distribution end
    b. Where were the supplements obtained and in what quantities
    c. What supplements were distributed
    d. What personnel and facilities were involved in distribution
    e. How were the supplements distributed (frequency, quantity, preparation)

12. Plans for a new food supplementation program

13. Does the Center provide medical supplements; e.g., iron, calcium, vitamins

14. If yes, see Item No. 10

15. If no, see Item No, 11

16. Does the center provide medical supplements to partially or completely weaned children

17. If yes, see Item No. 10

18. If no, see Item No. 11

19. Vaccinations, innoculations given to

    a. children
    b. mothers

20. Does the Center give instruction in hygiene, nutrition

21. If it does

    a. What kind of instruction
    b. when is it given
    c. what personnel give it
    d. where did they receive training

(To establish average size of family and proportion of surviving children to pregnancies)

22. Number of completed pregnancies; number of

    a. women with one completed pregnancy
    b. women with two completed pregnancies
    etc.

23. Number of surviving children; number of

    a. women with 1 surviving child
    b. women with 2 surviving children
    etc.

24. Number of women with present child giving birth

a. maternity hospital
b. at home attended by trained midwife
c. at home attended by untrained midwife

APPENDIX III a

RESULTS OF INDIVIDUAL NUTRITION SURVEY QUESTIONNAIRE

QUESTION 1 - Identification of interviewed women by location of their homes

A. Kabul City Sections (neighborhoods)

Location	No. of Women	Location	No. of Women
Nauabad	4	Darwaze Lahore	7
Sang Tarashi	1	Bala Koh	1
Shahshaheed	9	Bagh Ali Mardan	7
Chardeh	5	Karte Parwan	2
Darulaman	5	Nakhas	2
Jade Maiwand	4	Alauddin	4
Guzargah	2	Shash Darak	1
Chelsetocn	4	Karte Nau	3
Deh Mahzang	20	Yaka Tut	4
Barakha	7	Willayati	1
Share Nau	2	Karaki	1
Agha Ali Shamps	3	Tandur Sazi	3
Karte Seh	8	Shor Bazaar	5
Chendawal	8	Ashqan Arfan	6
Kote Sakhi	3	Sarai Ghazni	6
Mahbob Qala	1	Andorabi	2
Pule Ortan	1	Deh Afghanan	6
Pule M'd Khan	1	Kulula Pushta	2
Kharabat	2	Darakhte Shing	1
Kote Sangi	6	Sarji	3
Karte Char	2	Said Noor M'd Shah Mina	3
Koche Quazi	2	Jamal Mina	9
Qala Fatahullah Khan	5	Kotel Khair Khan	1
		Ahang Gari	1

TOTAL INTERVIEWED - 182 Women

B. Villages in Kabul Province (radius of 15 miles from Kabul City)

Location	No. of Women
Kargha	1
Aw Shar	1
Jangalak	1
Semit Khana	3
Deh Khodadad	2
Deh Kepak	4
Deh Murad Khan	4
Deh Sabz	1
Deh Danah	1
Bene Hissar	2
Boot Khak	1
Qala Murad Beg	1
Qalai Badar Khan	2
Qola Cha	3
Qalai Ahamd Khan	2
Qalai Ghaibi	1
Qalandar Khel	1
Qalai Shahda	1
Qalai Jawad	2
Qalai Wazir	1
Qalai Quazi	2
Siah Sang	1
Khwaja Rawash	2
Wazir Abad	2
Bebe Mahroo	2

TOTAL INTERVIEWED - 46

C. Provincial Sites (Towns, Villages or Hamlets)

Location	No. of Women
Gulbahar	2
Jaghuri	1
Panjsher	1
Jaji	1
Mashreqi	1
Logar	7
Ghazni	2
Kohdahman	9
Maidan	1
Kohestan	1
Parwan	1
Kandahar	2
Char Asyah	3
Ghorband	1
Paghman	4
Wasel Abad	4
Puli Khumri	1
Safed Sang	1
Hoot Khel	1
Tarakhel	3
Lalandar	1
Sar Asyab	1

TOTAL INTERVIEWED - 53

D. Breakdown of total interviewees by Location

Total Interviewed	Location	Percent
182	Kabal City	64.8%
53	Provinces	18.8%
46	Kabul Province	16.4%
281		100%

QUESTION 2 - How many people in the household?
a. Adults (over 15)
b. Children (under 15)

a. 285 responded

total number of adults (over 15)
904

average number of adults per family
3.1

b. 285 responded

total number of children
1,034

average number of children per family
3.7

c. total number of persons reported in families
1,938

average number of persons per family
6.8

QUESTION 3 - How many in the household
a. Have attended school
b. Are now attending
c. Have completed 6th grade

285 responses, overlapping of answers exists

	Number	Per Centage
a. no member of the family has attended school	118	37%
b. at least one member is attending school	115	40%
c. at least one member has completed 6th grade	102	35%
(at least one member has had some schooling	167	63%)

QUESTION 4 - a. How many live children have you borne? (Do not include miscarriage or stillbirth)
b. How many of your children are now living?
c. Who helped in the delivery
d. What did the other children die of?
e. Did any die of swelling of the body?
f. Did you ever lose a baby before full term?

a and b received 285 responses

a.

children	total number
born	1,256
surviving	984
average no. children per women born	4.4

b.

children	total number	percentage
average no. children surviving per woman	3.4	
infant/child mortality per 1256 births	272	21.4%
women who miscarried	70	24.5%
no. of miscarriages	103	7% of total pregnancies

c. 275 responses; overlapping exists because answers included other than last child

assistant	number	percentage
dayah	111	40.3%
midwife (home visit)	25	9.0%
relative (female)	54	19.0%
husband	3	1%
no help	11	3%
home (assistance not included)	26	9%
midwife (maternity hospital)	82	29%

d. 126 women responded, results refer to 160 children who died or 58% of the total 272 children who died; answers overlap because mothers occasionally indicated more than one ailment for the child.

ailment	number	percentage of 160
dysentery & vomiting	41	25%
(e) children who showed signs of edema	33	20%
other diseases		
diphtheria, measles, pneumonia, whooping cough	133	83%

QUESTION 5 - Height/weight/age of this child. (This child meaning the child she has delivered in the hospital, or has brought to the MCH clinic, or is looking after during the interviewer's house visit, whichever is applicable.)

Number of children for weight and height vary because occasionally scales and tape measures were not available at the same time

Age range	no. of children	Average Weight	Average Height	no. of Children
0 - 6 mo.	43 out of 48	4.5 kg	57.5 cm.	45 out of 48
6 mo-12 mo.	47 out of 60	6.9 kg.	65 cm.	57 out of 60
12 - 24 mo.	86 out of 104	7.7 kg.	72.5 cm.	99 out of 104
24 - 36 mo.	11 out of 14	9.4 kg.	70 cm.	13 out of 14
36 - 48 mo.	19 out of 23	10.4 kg.	80 cm.	22 out of 23
48 - 60 mo +	18 out of 20	12.8 kg.	90 cm.	19 out of 20

QUESTION 6 - Duration of breast feeding
a. This child
b. Previous child

Question 6 was not answered as was desired. The women interviewed merely indicated whether or not they were breastfeeding their last or previous child. This information is included in question 7.

QUESTION 7 - Why did you stop nursing
a. This child, if applicable, or
b. Previous child

Was it because
c. You became pregnant again
d. You gave birth to another baby
e. You didn't have enough milk
f. Sickness of the baby or yourself
g. Other reason, such as separation of family, need to go to work, etc.

There were 269 children present during the interviews.

a & b:

child	number	percentage
present child	140	53.5%
present child weaned	34	24.3 % of 140
previous child	125	6.5%

c to g: 253 women answered; overlapping exists because women occasionally answered for more than one child.

reason	no. of women	percentage of 253
pregnant	96	41%
birth	20	8%
inadequate milk	69	29%
mother or child became sick	41	17%
traditional period of breastfeeding had passed (2 1/2 years)	64	26%

QUESTION 11 - a. Do you give additional food to the breast fed baby?
b. What foods do you give?
c. How much?
d. At what age did you begin giving additional food?

221 women responded

a. Supplementary feeding	number	percentage
yes	221	100%
no	0	0

218 women responded;
Overlapping exists because women often indicated more than one food.

b. Foods	number	approximate percentage
meat broth	44	20%
vegetable soup	17	7%
rice water	7	3%
rice	21	9%
shola (short grain rice cooked to a mush with lentals and sometimes meat)	8	3%
dam pokht (long grain rice cooked in meat broth)	31	14%
boiled rice	11	5%
eggs	3	1%
milk	9	4%
cow milk	13	6%
powdered milk	37	16%
butter	9	4%
yoghurt	1	less than 1%
nan (barely leavened whole wheat bread) and tea	98	45%
biscuit	24	11%
halwa (ground wheat or rice boiled with sugar)	2	less than 1%

Food	number	approximate percentage
firni (cornstarch and milk pudding)	13	6%
vegetables (cooked)	19	8%
fruits	11	5%
roghan (fat)	2	less than 1%
dal (lentel)	1	less than 1%
family diet	15	6%
Traditional infant food		
sakoo dana	10	5%
pyawe zoof	36	16%
badyan	5	2%
chararak	1	less than 1%

QUESTION 12 - When the child no longer receives breast milk, what does he eat?

247 women responded
Answers overlap because women indicated more than one food.

Food	number	approximate percentage
family diet	65	26%
meat broth	31	12%
vegetable soup	31	12%
rice water	4	1%
rice	32	13%
shola	14	5%
dam pokht	68	27%
boiled rice	20	8%
milk	6	2%
cows milk	10	4%
powdered milk	14	5%
butter	3	1%
yoghurt	2	1%
eggs	7	2%
nan and tea	53	21%
biscuit	31	12%
halwa	1	less than 1%
firni	5	1%
vegetables (cooked)	29	12%
fruit	19	7%
dal	1	less than 1%
sakoo dana	2	less than 1%
pyawe zoof	9	4%

QUESTION 13 - a. Does the child eat from the family bowl? or
b. Do you put aside his own portion for him, or
c. Do you cook some food especially for him?

259 women responded

a. Response	number	percentage
yes	100	38%

258 women responded

b. Response	number	percentage
yes	153	59%

259 women responded

c. Response	number	percentage
yes	75	28.9%

QUESTION 14 - a. What kind of stove do you use for cooking?
b. What kind of pots and pans?
c. Do you have a special pan for cooking food for the child?
d. Do you have a special cup or bowl for the child's portion of food?
e. Do you help the child to eat all his food?

279 women answered

Overlapping exists because some women indicated use of more than one type of stove

a.

Type of stove	number	percentage
wood stove	102	36.5%
coal brasier	73	29.7%
Kerosine primus	68	24.8%
tandur (local mud oven built into wall)	46	16.7%
electric hot plate	41	14%
2 kinds	57	22%

b. 279 women answered
overlapping exists because women often indicated more than one type

Utensil	number	percentage
aluminum	159	56.9%
copper	118	42.4%
porcelain	111	39.8%
tin	45	16.2%
earthenware	28	10%

c. Question c was not included in the Questionnaire by mistake.

d. 277 women answered

Response	number	percentage
yes	203	65%

e. 258 women answered

Response	number	percentage
yes	180	65%

QUESTION 15 - Estimate of 24 hour family menu: What did you eat
a. Yesterday noon
b. Last night
c. This morning?

282 women answered

a. Food	Number	Percentage
nan and tea	280	99%
milk/milk product	21	7%
biscuit/cake	13	4%
eggs	7	2%
soup	1	less than 1%
nothing	7	2%
b.		
meat broth	71	24%
vegetable soup	2	less than 1%
rice	97	34%
vegetables	30	10%
meat	27	9%
eggs	2	less than 1%
milk/milk product	5	1.5%
dal	3	1.1%
pyawe	9	3%
nan and tea	37	13%
biscuit/cake	2	less than 1%
fruit	3	1.1%
nothing	12	4%
c.		
meat broth	67	23%
rice	58	20%
vegetables	43	14%

Food	Number	Percentage
meat	18	6%
eggs	2	less than 1%
milk/milk products	15	5%
nan and tea	69	24%
dal	2	less than 1%
halwa	2	less than 1%
nothing	15	5%

QUESTION 16 - a. Is this what you would usually eat at home?
b. Would you have different foods at another time of year? (note seasonal modifications if possible).

a. 277 women answered

Response	number	percentage
yes	270	98%

b. 251 women answered

yes	123	49%

QUESTION 17 - Do all members of the household get all of these foods; i.e., adults and children, males and females?

Response	Number	Percentage
yes	231	83%

QUESTION 18 - a. Do you eat with your husband, or does he eat with the other men?
b. Do the children eat with you or with the men?
c. At what age do boys begin eating with the men?

a. 225 women answered

Response	Number	Percentage
women eat with husbands	193	86%
women eat separately	32	14%

b. 218 women answered

child eats with	number	Percentage
mother	152	70%
other men	66	30%

c. Part c turned out to be confusing to the women and received almost no answers.

QUESTION 19 - Where do you get the food you prepare for your household
a. from the bazaar
b. from your own fields, garden or farm
c. In other ways
d. Who gets the food for the family?

a. 275 women responded

Place	Number	Percentage
bazaar	275	100%
own land	32	11%

b. 275 women responded

Food is bought by	Number	Percentage
husband	175	62.3%
other male	71	25.8%
wife	27	9.8%
other women	5	1.8%

QUESTION 20 - a. Do you own a cow, goats, sheep, or chicken?
b. Do you use the milk, eggs and meat in feeding your family?
c. When was the last time your family ate meat or eggs?
d. How much milk, how many eggs, do you use each day?
e. For how many people? Children or adults?
f. Where do you obtain drinking water for the children?
g. Where do you obtain drinking water for the rest of the family?

a. 285 women responded

Livestock	Number	Percentage
chickens	38	13.3%
cows	27	9.4%
sheep	12	4.2%
nothing	208	72.9%

b. 208 women responded

Food	Number	Percentage
meat	193	92.4%
eggs	11	5.4%
milk	4	1.9%

c (1) 193 women responded
eggs and milk were excluded because the numbers were not significant

Meat consumption	Number	Percentage
at least 1 x week	84	43.5%
at least 2 x month	77	39.8%
at least 1 x month	31	15.6%
at least 1 x 6 mo.	1	less than 1%

c (2) 275 women answered

Most recent consumption	Number	Percentage
1 week to 1 day before interview	195	71.8%
1 month to 1 week before interview	77	28%
more than 1 month before interview	1	less than 1%

d. 256 women responded

Amount	Number	Percentage
a little	6	23.4%
0 - 1 lb.	79	30.8%
1 - 2 lb.	122	51.6%
more than 2	30	11.7%
enough	19	8%

e. 231 women responded

Amount	Number of people in family	no. of responses	%
0 - 1 lb.	1 - 3	19	8.2%
"	4 - 7	47	20.3%
"	8 +	13	5.6%
1 - 2 lb.	1 - 3	18	7.7%
"	4 - 7	66	28.5%
"	8 +	38	12.1%
2 lb. +	1 - 3	3	1.28%
"	4 - 7	17	7.35%
"	8 +	10	4.2%

f and g. The answers were identical; 260 women responded

Source of drinking water	Number	percentage
city system	104	40%
well	105	40.3%
open ditch	24	8.4%
river	9	3.4%
karez (underground water irrigation conduit)	8	3%
natural spring	6	2.3%
city water tank delivery	4	1.6%

QUESTION 21 - Are there any foods, beverages or remedies which you ate which are especially healthful and auspicious for
a. A pregnant mother
b. Nursing mother
c. Breast-fed child
d. Weaning child approximately 6 mo. to 2 years
e. Fully weaned child, approximately 2-5 years?

Identify for each group.

a. 266 women responded
overlapping exists because most women indicated more than one item.

Food	Number	Percentage
Pickles	78	29.3%
gili sar shui	58	21.8%
everything	50	18.7%
white rice	42	15.7%
peppers	38	14.2%
fresh fruit	28	10.5%
vegetables	25	9.3%
meat broth	24	9%
meat	23	8.5%
tea leaves	23	8.5%
sweets	21	7.9%
sour cream	17	6.3%
leeks	11	3.2%
butter milk	7	2.9%

b. 257 women responded
overlapping exists for same reason as in a.

soup	145	56.3%
everything	87	23.7%
rice	23	8.9%
fruit	19	7.3%
melon	16	6.2%
buttermilk	14	5.4%

Food	Number	Percentage
meat	10	3.7%
macaroni	5	1.9%
sweets	5	1.9%
nothing special	2	.7%
c.	223 women responded	
milk	80	35.8%
soup	39	17.4%
family diet	30	13.4%
boiled rice	23	10.3%
dam pukht	23	10.3%
fruit juice	22	9.8%
zoof	19	8.5%
nan	17	7.6%
vegetables	15	6.7%
juani badyan	12	5.3%
biscuits	11	4.9%
nothing special	4	1.7%
eggs	3	1.3%
soft food	3	1.3%
firni	3	1.3%
sakoo dana	3	1.3%

d. 240 women responded

Food	Number	Percentage
family diet	86	35.8%
soup	47	19.5%
dam pukht	38	15.8%
milk	31	12.9%
rice	29	12%
vegetables	24	10%
nan	21	8.7%
fruit	14	5.3%
meat	12	5%
nothing special	9	3.7%
eggs	7	2.9%

e. 246 women answered

family diet	176	71.5%
dam pukht	33	13.4%
soup	19	7.7%
fruit	11	4.4%
vegetables	8	3.2%
meat	8	3.2%
nothing special	8	3.2%
eggs	4	1.6%

QUESTION 22 - Are there any food or beverages which you think are bad or inappropriate for the 5 groups listed above? Identify for each group.

Results of question 22 are not included. Few women answered the questions. Of these, most said "nothing". Other answers appeared to be in obvious contradiction of the answers given to question 21. Apparently Question 21 was too long and too demanding of the women interviewed and as a result were not very eager to take on a similar query about their traditions regarding food.

QUESTION 23 - a. From where did you get these ideas about feeding, from relations, grandmother, friends?
b. Do you think it is good teaching?
c. Has it kept your family healthy?
d. Would you like to learn more about good food, so that your children would have a better chance of being big and strong?

Results are also not included. Although the question was simpler the interviewers were not able to get sufficient or coherent responses from most of the women. It appeared the women didn't understand the purpose of the question.

QUESTION 24 - What do you think about flies?
Do you think they're harmful for children?

284 responded

Response	Number	Percentage
yes	278	97.8%
no	3	1%
don't know	3	1%

QUESTION 25 - After you clean your child or change his clothes do you wash your hands?

285 responded

Response	Number	Percentage
yes (soap and water	131	46.1%
yes (only water)	112	38.4%
no	12	14.5%

QUESTION 26 - What latrine facilities do you use?
a. Do you have a water closet?
b. Do you use other places?

284 women responded

a. Latrine facilities	Number	Percentage
yes	139	48.5%
no	145	51.5%

b. Other facilities	Number	Percentage of 145
alley	98	67.6%
outside compound	37	25.5%
inside compound	10	6.9%

APPENDIX III b

Statistics from Pre-Natal Care Patient Charts

This compilation of statistics was made from 401 current (1969-70) patient charts of women attending the prenatal clinics in Shararah (the Maternity Hospital) and Jada (a section of the old city). The charts include information on the pregnancies, number of births and number of surviving children, number of adults and children in the household; weights of pregnant mothers taken bi-monthly from the sixth to ninth month; hemoglobin count taken bi-monthly; dietary history of the pregnant women; other information about water supply, medications, and complications during pregnancies. Because of various limitations the CARE team only compiled what was thought relevant to the survey at hand. There may be some question about the accuracy of this data, but personal observation by a team member indicated that midwives at the prenatal clinics who filled out the charts did so responsibly.

a. Infant or child mortality

Children	Total number	
born	1,294	
surviving	1,096	
average no. of children born per woman	3.2	
average no. of children surviving per woman	2.7	
infant/child mortality	198	15%

b. Infant or child mortality for women with five or more children. There were 102 women or 30% of the total with five or more children.

Children	Total Number	Percentage
born	791	
surviving	520	
average no. children born per woman	7.7	
average no. of children surviving per woman	5.4	
infant/child mortality	271	34.2%

c. Miscarriages or abortions

Jada Clinic	Total Number	Percentage
pregnancies	756	
live births	690	
miscarriages	66	7.4%
women who miscarried	53	26.3%

Shararah Clinic	Total Number	Percentage
pregnancies	618	
live births	604	
miscarriages	14	2%
women who miscarried	11	5.5%

Both Clinics	Total Number	Percentage
pregnancies	1,374	
live births	1,294	
miscarriages	80	5.7%
women who miscarried	64	15.6%

d. Foods pregnant women indicated they were eating

Jada Clinic	Number	Percentage
Food		
meat	150	74.6%
rice	147	73.4%
vegetables	189	94.5%
fruits	135	67.5%
eggs	67	33.1%
cheese	29	14%
butter	11	5.4%

Shararah Clinic

Food	Numbeer	Percentage
meat	133	66.5%
rice	133	66.5%
vegetables	138	69%
fruit	142	71%
eggs	84	42%
butter	24	12%
cheese	14	7%

e. Weights of pregnant women taken in the last three months of pregnancy

Jada Clinic

Weight	Number	Percentage
below 100 lbs.	2	.9%
100 - 110 "	25	12.4%
110 - 120 "	20	9.9%
120 - 130 "	48	23.9%
130 - 140 "	48	23.9%
140 - 150 "	27	13.4%
above 150 "	30	14.4%

Shararah Clinic

Weight	Number	Percentage
below 100 lbs.	0	0%
100 - 110 "	29	18.5%
110 - 120 "	61	30%
120 - 130 "	59	29.5%
130 - 140 "	21	10.5%
140 - 150 "	19	9.5%
above 150 "	11	5.5%

f. Hemoglobin counts of pregnant women taken during the last three months of pregnancy.

JADA CLINIC

Hemoglobin Count	Total Number	Percentage
less than 60%	1	less than 1%
60 - 65%	20	9.95%
66 - 70%	95	47.26%
71 - 75%	24	11.9%
76 - 80%	52	25.8%
81 - 85%	8	3.9%
above 85%	1	less than 1%

SHARARAH CLINIC

Hemoglobin Count	Total Number	Percentages
less than 60%	3	1.5%
60 - 65%	23	11.5%
66 - 70%	105	52.5%
71 - 75%	33	16.5%
76 - 80%	32	16%
81 - 85%	4	2%
above 85%	0	0%

THE EXTENT AND CLINICAL FEATURES OF CALORIE PROTEIN DEFICIENCY AMONG CHILDREN IN KABUL

APPENDIX IV a

by Azizurrahman Samadi M.D., D.P.H.

The purpose of this paper is to show the extent of calorie-protein deficiency among children in Kabul as well as the clinical features of the disease in this part of the world.

Methods and Materials

The subject of this study is formed by 99 cases of calorie-protein deficiency out of 542 children who visited the Pediatrics Outpatient Department of Kabul University (Women's Hospital) from October 28, 1969 to November 6, 1969. A complete dietary history of these children was obtained and physical examinations were carried out by the author. The hemoglobin level of these children was determined by the paper hemoglobin scale.

Results

A. Epidemiology:

1. Age: The incidence of calorie-protein deficiency is shown in Table One which shows peak incidence between one and three years.

2. Sex: There were 53 cases (53.5%) male and 46 (46.5%) female children.

3. Diet: As far as the dietary history is concerned, 96 out of 99 children were being fed by breast milk and only three were given powdered milk. The dietary history revealed that supplementary food was started for 17 children between 6-12 months, 24 children between 12-18 months and 40 children between 18-24 months. In the great majority of these children, the nature of supplementary food was small portions of the family diet which was quite inadequate quantitatively as well as qualitatively. As for weaning habits, 62 children were weaned at different ages. This is shown in Table Two. The remaining 34 children were still on breast milk at the time of the study. Their ages are shown in Table Three.

4. Reason of visit to the clinic: The apparent complaint for which the child was brought to the clinic is shown in Table Four.

5. Socio-economic factors: All of these children belonged to the low socio-economic sector of the population. In the pathegenesis of the disease not only poverty played its role, but also the ignorance of the mothers was an important contributing factor.

B. Clinical Features of the Calorie-Protein deficiency

There were 49 cases of kwashiorkor (49.5%) and 50 cases of marasmus (50.5%)

1. Kwashiorkor

Edema: Kwashiorkor children showed different degrees of edema.

Weight and Height: The median weight and height of kwashiorkor as well as marantic children are shown in Table Five and Six.

Mental Changes: All cases of Kwashiorkor showed irritability; 26 children revealed apathy and 19 cases had peevishness as well.

Skin Changes: There were 22 children who had skin lesions - 11 cases showed only scaley lesions; 8 cases revealed scaley lesions plus hyperpigmentation and three cases had only hyperpigmentation.

Vitamin A deficiency: There were five children who showed xerosis and photophobia. One of them had Bitot's spots.

Vitamin B Complex deficiency: Twenty-six children who showed riboflavin deficiency such as cheilosis and angular stomatitis.

Hair Changes: Thirty-nine out of 99 children had hair changes such as dyspigmentation and thin hair.

Vitamin D deficiency: Eleven children showed signs of Vitamin D deficiency - three had widened wrists open fontanelle after two years of age and costochondral beads; eight cases revealed only costochondral beads.

Hemoglobin: The median Hb level in Kwashiorkor and marantic children as well as their mothers is shown in Table Seven.

2. Marasmus:

Degree of Marasmus: There were 15 children with first degree, 30 cases with second and five cases with third degree marasmus.

Mental Changes: Eight cases of marasmus showed only irritability.

Discussion

The incidence of malnutrition among children forms 18.3% of the children who visited the Pediatrics O.P.D. clinic. This is quite high. The peak incidence is between 1 - 3 years and it is in line with previous studies in this area as well as with the Coonor and Uganda series.

The feeding pattern showed that 96% of the infants in this study are fed breast milk. The supplementary foods are started from 8 months onward. These are unmodified versions of certain parts of the family diet such as small quantities of rice, bread, vegetables, tea and soup. In 45 out of 62 (72.4%) children weaning started between 1 1/2 years to 3 years. At the time of the study 34 cases were on breast milk and 27 out of them (79.3) were over 1 1/2 years old.

The late start and poor supplementary foods on the one hand and very late weaning on the other are considered responsible for such high incidence of malnutrition in this area. It seems the mothers rely on breast milk alone and do not consider the significance of supplementary food at the proper time. On the top of habits of feeding 45.5% of these children showed chronic diarrhea which aggravates the picture.

The majority of the mothers brought their children to the clinic not for malnutrition but for other complaints such as diarrhea, U.R.I., fever, irritability, vomiting, etc., and only 24 out of 99 cases complained of edema or failure to thrive. This shows that the parents' information about child rearing techniques is very poor and needs health education in this field. The occurence of calorie-protein deficiency among low socio-economic groups is in line with reports of other workers from different parts of the world.

The clinical picture of calorie-protein deficiency revealed 49.5% kwashiorkor and 50.5% marasmus. The mean body weight of kwashiokor children irrespective of their age is under 8.5 kilograms. This observation is in line with the author's findings in Kabul and Hyderabad. The height of kwashiorkor children is not as affected as in marasmus.

The incidence of Vitamin A deficiency is 10.2%. Vitamin A deficiency was seen in children over 2 years of age. All of these children were off breast milk and four out of five had chronic diarrhea. It seems that breast feeding might have provided some small quantity of Vitamin A in order to prevent clinical signs of Vitamin A deficiency in some of the children who were fed with breast milk for longer than two years. Since most of these children with Vitamin A deficiency showed chronic diarrhea, diarrhea should also be considered an important factor in the pathogenesis of Vitamin A deficiency because it interferes with the small quantity of Vitamin A present in the food.

A very interesting finding is clinical signs of rickets among kwashiorkor children. This formed 22.4% of the cases. The clinical signs of rickets in marasmus formed 10% of the cases. These signs of rickets are related to physical growth in the first year of life. It seems that the growth rate of these children was sufficient during the first year of life but that with poor Vitamin D containing food or lack of sunlight costrochondral beads developed. After growth was arrested because of calorie-protein deficiency, the ricketic process was stopped.

As for the Hb level, the median in both kwashiorkor and marantic children is low but the level is much lower in kwashiorkor children, probably because of low intake of food containing iron, Vitamin B 12 and protein needed for the synthesis of Hb.

APPENDIX IV b

SOME OBSERVATION ON NUTRITION IN KABUL CITY

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Introduction

Reports on nutritional problems of Afghanistan are few. Some studies were carried out on endemic goitre and lathyrism, but no comprehensive assessment of the nutritional status of the population has yet been performed.

The population of Kabul City, which is located in the valley of Kabul river and mostly 1850 to 1950 meters above sea level, was about 500,000 inhabitants at the time of the survey, which is about 3.3% of all population of Afghanistan. The number of inhabitants of the capital had at least doubled in the previous 10 - 15 years by immigration from practically all provinces, mostly from east central, northeast and southeast areas of the country. The population of Afghanistan is estimated to be about 15 million.

For these reasons, although the Farsi and Pashtu speaking elements are predominant, the population of Kabul City is composed of all important ethnic groups, and the nutritional customs and food patterns observed in the city reflect the customs and patterns of the country. There is, in fact, great similarity in food patterns in all the important parts of the country, and relatively little day-to-day variety of the menu.

Material and Methods

The multipurpose survey was carried out in 1966-67 on 967 residents of six randomly selected clusters of houses within Kabul City, and the findings are considered to be representative of the city's population. The main emphasis was on Serological investigations, but a physical examination of each person, also, included measurement of height, and the recording of certain physical features and clinical signs in connection with nutrition. The multipurpose health survey which was

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launched in November 1966 in randomly selected groups of population in Kabul City made it possible to collect information of some value for estimation of the nutritional status of the inhabitants of the capital. However, the nutritional problems were not given any high priority in this survey, so that the data collected were limited in scope.

The background information about the economical factors and about the ecological factors related to the nutritional problems were collected from a number of official and non-official sources including national and international experts.

Background Information on Economic Factors

More than 85% of the population of the country and about 10% of the population of the capital are directly or indirectly employed in agriculture, which represents about 70% of the national income. Yearly agricultural food production consists of about 2,300,000 tons of wheat, 700,000 tons of maize, 730,000 tons of barley, almost 400,000 tons of rice, 180,000 tons of leguminous plants, 130,000 tons of potatoes, about 50,000 tons of sugar beets, 50,000 tons of sugarcane and 55,000 tons of oil seeds (cotton seeds, linseeds, poppy seeds and sesame seeds). The fruit production is estimated to be more than one million tons (grapes 270,000 tons) and mulberry production may be predominant to any other kind of fruit. Among other kinds of fruits to be mentioned are melons, apricots, peaches, pomegranate, apples, pears and figs. Citrus fruits are produced in Nangarhar province, but the production is not yet important. Several kinds of vegetables are produced especially in provinces with moderate and sub-tropical climate, with yearly production estimated to be more than 500,000 tons.

The above mentioned data taken from the official and non-official statistics are incomplete. It could be estimated that about 20% of the crops are destroyed by insects and rodents. Nevertheless, according to some experts, the actual production is to be increased by about 20%. Afghanistan's annual wheat production deficit runs between 150,000 to 200,000 tons. This deficit may be balanced, according to the experts, by increasing the actual low productivity of agriculture, especially by improvement of the irrigation system. Besides wheat, sugar, tea, oil and some tropical and sub-tropical sort of fruits (oranges) are imported. The exportation of food from Afghanistan is limited to fruits only, chiefly grapes, melons, dried fruits and nuts.

According to the statistics of 1968, from a total number of more than 30 million livestock, - 22 million of sheep, 3.7 million of goats, 1.2 million of donkeys, 300,000 camels and

300,000 of horses are bred in the country. The breeding of poultry is much less important for the nutrition of the population. Nevertheless, it has been estimated that nearly 1/3 of the livestock population is lost by malnutrition, parasitism, contagious and noncontagious diseases.

With the animal production and livestock breeding, about 3 million inhabitants are occupied, but less than 5% of the population in Kabul City. According to the FAO experts, it has been estimated that only 16% of the livestock owners are considered to be genuine nomads (kochis) - flock owners who have no settled home, but are on the move all round the year. Much more important breeders of livestock seminomads or settled society spending a shorter or longer period of the year in migration. Long migrations are now being made difficult for the livestock owners by the breaking of range land into dry land wheat farming, even at the altitude more than 2,500 meters above the sea level.

In some rivers, namely Amu Darya, Kunduz, Helmand, the water is rich in fish, but fisheries are not yet developed, especially because of lack of distribution facilities. In the winter time, some fish is available in the markets, in Kabul City, mostly imported from Pakistan. Also, venison can be neglected in enumeration of protein resources for the population although in some remote limited areas it may represent a relatively important part of the nutrition.

Background Information about Ecological Factors related to Nutritional Problems

The staple food of more than 3/4 of the population in Kabul City and more than 95% of the population in the country consists of bread and tea with sugar. In Kabul City, the only bread which is available for the great majority of inhabitants is prepared from wheat and in some areas from maize. The flour prepared in the villages and suburban areas in the traditional mills contains the complete proteins, vitamins and minerals. Rice and meat dishes are prepared occasionally in most of the families and fruits or vegetables are consumed in Kabul City mainly in the summer and autumn months. Musshong peas are a very common legume. In winter time, important sources of vitamins are the dry fruits (raisins, mulberries). Because of the relatively high cost, vegetables are not available in sufficient quantities during winter for the lower classes in Kabul City and, also, they are not available in some mountainous areas. The hypevitaminosis is common in the winter months.

Sheep meat is preferred by the population and also beef, because of its low price, is consumed in the lower classes on the average of once a week or once a month. The consumption of camel meat is common only by nomads. Raw meat is never consumed and all national dishes are prepared from boiled or grilled meat (game, pigeons, wild ducks, rock partridge).

The consumption of milk and milk products is common only by nomads and in families in the population who are engaged in agriculture. Ingestion of sour milk (yoghurt, maast) is more common than that of fresh milk. From the boiled milk, a special kind of sour milk (dogh) is prepared by adding cucumber juice and spices. The slightly salted, non-dried cottage cheese (qrout) is imported daily from the villages and nomad camps to the markets in Kabul City, but in the great majority of population, it does not represent an important source of proteins. Also, the consumption of eggs is limited. The most common fat in the villages is sheep fat (dumbah) and in cities manufactured tinned fat is used to some extent. The consumption of butter is very limited. Butter mixed with fat of beef and mutton is more common.

The majority of the population is supplied with food from small shops or from the markets in which the shops are of a similar pattern. The hygiene in food distribution is very low and the foodstuffs cannot avoid being contaminated by fingers, by flies, and the vegetables by surface water utilized for refreshing, which is often collected from the open ditches (juis).

The level of the hygiene of food preparation in the families is poor. In the majority of the houses, cooking is done in the courtyard under the open air.

Only a few manufacturers of food products exist in the country (one factory for canned food, and one bakery, one wine production plant and some other small enterprises). The foodstuffs offered in the bazaar are usually produced in small quantities by local individual farmers and nomads and imported to the capital so that in case of contamination the number of affected people is limited.

Rickets may be related to deficiencies in housing in the old city of Kabul, because of lack of irradiation with the ultraviolet rays of sunshine, common in the old sector of Kabul City.

The consumption of lathyrus sativus is limited to some mountainous areas namely in Fariab, Badakhshan and Wardak provinces (local name "Patak lang"). Lathyrism has been observed in the villages of these provinces and some cases were hospitalized in the hospitals of Kabul City.

Endemic goitre is common especially on the northern and southern slopes of the Hindukush and along Amu Darya river.

Results of the Multipurpose Survey in Kabul City

A summary of the measurements of height and weight for 267 randomly selected children in Kabul City, below fifteen years of age, is given in Annex Table 1. The findings have been compared with the "Harvard Standards" and this comparison is shown in Table 1. For the heights up to about 120 cm., i.e., roughly corresponding up to the ages 6-8 years, there is no significant difference between the data and the standards. However, for the larger school-age children, the mean weight falls progressively below the standards, and for a height of 150 cm. (12-13 years) the mean is about 10% less than the standard of 38.6 kg.

The average weight could be calculated only in pre-school age, because of non-reliability of age information in older children (fig. 1).

Malnutrition was considered only when it was in a severe stage, requiring urgent medical attention (eight out of 967 individuals under survey, of these, four were children of age 0-2 years). Observations about rickets (enlargement of the epiphyses of the long bones, costochondral function of the ribs, prominence of the sternum. etc.) must be regarded as highly incomplete because of the difficulties of examination.

Paleness of conjunctiva was observed, ranging from 5 to 18% in different age groups.

Deteriorated teeth, i.e., the majority of the teeth severely deteriorated or missing, was observed in 68 persons (7%) and at least one carie was detected in 5% of children, ages 0-2 years, in 15% in ages 3-4 years, and in 30% in ages 5-6 years and in 76% in persons of the age group 25-44 (Table 3).

Conditioning Diseases

Among the conditions which may influence nutritional status respiratory diseases manifested by cough, diarrhea and fever lasting more than 1-2 weeks were recorded in percentages in the multipurpose health survey carried out in the randomly selected 967 residents of Kabul City (Table 5). Diarrhea was considered to be a condition with at least five or more motions a day.

The most common etiological agent of enteric infections

in pre-school children was enteropathogenis E. celi which was isolated in about 40%. In 3.5% Shigella, in 0.5% Salmonalla typhi and in 0.5% Salmonalla of other serotypes were detected in the children of this age group.

According to the epidemiological investigations carried out by the Public Health Institute within the last three years, the foodstuffs, most common in food poisoning have been found to be local cheese, curd, meat, butter and halwas (starchy cooked food). The agents responsible for food poisoning were Staphylococcus Pyegenes Aureus, Bacillus Proteus, Enteropathegenie Celi, Streptococcus Faecalis, Aerebacter Serogenes, Citrebacter and Clostridia Welchii.

Because of the serious deficiencies in the supply of safe water for the population of Kabul City, it must be presumed that waterborne enteric infections, especially in children, present one of the major conditions which may influence unfavourably the status of nutrition. According to the findings within the multipurpose health survey in Kabul City, pipe water is available in only 14% of the houses, public pipes in the streets or nearby areas are used in 28% of houses, shallow wells (exceptionally deep wells) in 23% of homes, public wells are accessible in 23% and water is not easily available in 20% of households.

The helminths are very common in most of the population and especially the high infestation in children and teenagers must be considered as a conditioning factor. In the age group between six to eighteen years helminths and protozoa were present as follows: Ascaris Lumbricoides in 75%, Hymenolepsis Nana in 8%, Ancylostoma Duodenale in 1%, Entamoeba Histolytica in 2% and Giardia Lamblia in 2.5%. Whooping cough and measles are highly prevalent and are shown on the results of the immunological survey of randomly selected population in Kabul City (Table 5). Pertussis and Parapertussis antibodies were determined by the Agglutination test in plastic panels and titres equal to or higher than 1.4 were considered positive. Antibodies to measles were determined by the Haemogglutination inhibition micro test in Takatas modification with Cereopithicus Erythrocytes titres of antibody 1.2 or above were considered positive.

Discussions

According to the statistical data on what production and importation, it may be estimated that at least 2 million tons of wheat are available annually for consumption by the population in Afghanistan, which means, 100 kgs. yearly and 410 gms. daily on an average for each inhabitant. It can also be estimated that about 1.25 million tons of rice and maize may be available

for the consumption in the country, which means that 110 kgs. per year for each person and 300 gms. daily average. It is difficult to estimate the total production of vegetables and fruits, but it can be estimated to be roughly 2 million tons not including that for exportation. If this estimation is correct, we can calculate the daily consumption for each person as an average of 400 gms.

Considering the above mentioned number of livestock breeds, we can estimate that about 5 million sheep, cattle, and goats may be available annually for the consumption by the population. On the other hand, milk products represent the most important source of proteins in a great number of families.

For comparison with the above mentioned calculation of consumption of the basic foodstuff, the daily ration recommended by the Ministry of Education for the student canteens may be mentioned as follows: For each student, daily 400 gms. corn, 275 gms. rice, 300 gms. potatoes, onions and other vegetables and fruits, 165 gms. meat, 20 gms. sugar, 10 gms. salt are made available. This ratio is based on empiric estimation and represents about 1000 calories.

According to the FAC (1967), it was estimated in the years 1961 and 1968 that the average per capita consumption was 2050 calories with 29.7 gms. fat per day. This data seems to be underestimated in comparison with the food production and general impression from the surveys. The underweight of children of puberty age, however, may be caused by deficiency of proteins in this age. It seems that a lack of protein of animal origin does not cover the increased needs of this age.

The role of conditioning diseases must be taken into consideration also in Afghanistan. In randomly selected children under four years of age in Kabul City, the diarrhea lasting more than one or two weeks was registered in 30% on an average during the examinations carried out throughout the year. On the other hand, in the summer months, the number of affected children increased up to 30 to 40%. Diarrhea is considered in developing countries as the most common of interaction between malnutrition and infection. For the time being no statistical data is available but it may be presumed that in Afghanistan as well as in other developing countries with poor sanitation and conditions, the morbidity of children due to diarrheal diseases is extremely high.

Helminthisais, namely Ascariasis, are also suspected in the developing countries, as unfavorable nutritional factor. High infestation rate and great number of Helminths which can

be detected in one individual can produce an effect on the nitrogen balance, and may facilitate the development and maintenance of chronic baterial infection, namely Shigellosis.

High morbidity and mortality from whooping cough and measles can be also pressured from the results of the immunological random survey in children in Kabul City. According to the studies from several developing countries, both of these diseases are followed by significant loss of weight and are considered precipitating factor of malnutrition.

Although the nutrition in Afghanistan is not usually considered to be as a major problem as in some other developing countries. detailed comprehensive study will be needed in order to establish the priority for nutrition within the other urgent health problems.

Table 1

Summary of measurements of height and weight for 267 children with reliable and complete measurements, and a comparison with the "Harvard Standard" (Stuart and Stevenson (1959)).

Height in cm					
Class-limits	Class-midpoints	Number of children	Mean weight in kg	Harvard Standard weight for the class-midpoint	Difference between mean and standard
58- 62	60	2	6.5	5.7	+ 0.8
63- 67	67	8	7.9	7.2	+ 0.7
68- 72	70	14	8.5	8.7	- 0.2
73- 77	75	11	10.0	9.9	+ 0.1
78- 82	80	17	10.2	11.0	- 0.8
83- 87	85	16	11.4	12.0	- 0.6
88- 92	90	16	14.5	13.1	+ 1.4
93- 97	95	16	14.1	14.3	- 0.2
98-102	100	14	17.5	15.6	+ 1.9
103-107	105	11	17.9	17.0	+ 0.9
108-112	110	21	18.0	18.8	- 0.8
113-117	115	11	20.4	21.0	- 0.6
118-122	120	23	23.8	22.9	+ 0.9
123-127	125	18	23.4	25.0	- 1.6
128-132	130	19	24.0	27.3	- 3.3
133-137	135	15	28.9	29.7	- 0.8
138-142	140	13	29.2	32.5	- 3.3
143-147	145	15	30.5	35.6	- 5.1
148-152	150	5	36.2	38.6	- 2.4
153-157	155	6	38.0	41.7	- 3.7
Total.....267					

Notes:

Within each 5 cm class of height, the weights were normally distributed with a standard deviation of 3.15 kg. However, this standard devision was only about 2.0 kg among the shortest children, increasing gradually to about 4.0 kg for children over 100 cm.

Table 2: Summary of some results (in percent of examinations relevant to nutrition in Multipurpose Health Survey, Kabul.

Age groups	0-4	5-9	10-14	15-24	25-44
Number of persons examined	221	265	140	121	149
Enlargement of thyroid gland					
Grade 1 (palpation)	-	1.6	0.8	6.2	4.3
Grade 2 and 3	-	-	-	-	0.7
Paleness of conjunctiva	11	5	5	12	19
Caries	11	41	46	45	76

Table 3: Number of persons examined for serum protein, by age, and the average amount (g/100 ml) of total protein, of albumin and of the gamma globulin.

Age	3-5	6-8	9-11	12-14	15+
Number of persons	29	40	28	18	109
Mean total protein (g)	6.20	6.31	6.65	6.81	6.88
Mean albumin (g)	3.50	3.52	3.60	3.55	3.58
Mean gamma fraction	1.06	1.17	1.30	1.44	1.31

Table 4: Fewer respiratory diseases and diarrhoea in different age groups (in percentage) under multipurpose health survey in Kabul City.

Age (years)	0-4	5-14	15-24	25+
Total	100	100	100	100
All persons with Fever	17	9	20	24
Respiratory diseases manifested by cough	15	18	31	35
Diarrhoea	20	8	6	2

Table 5: Results of the Serological Investigations within the Multipurpose Health Survey in Kabul City.

	Number of persons of age-group:									TOTAL
	0-3	3-4	5-6	7-9	10-14	15-19	20-24	25-44	45+	
Pertussis										
Number of sera tested	52	92	87	127	101	50	43	110	62	724
Number of positive	2	4	3	15	9	8	13	31	24	109
Percent positive	4	4	3	12	9	16	30	28	39	
Parapertussis										
Number of sera tested	52	92	86	127	101	50	43	110	62	723
Number of positive	3	11	6	34	28	13	19	44	26	184
Percent positive	6	12	7	27	28	26	44	40	42	
Measles										
Number of sera tested	27	61	73	119	111	49	2	2	2	446
Number of positive	9	53	63	114	107	47	2	2	2	399
Percent positive	33	87	86	96	96	96	100	100	100	

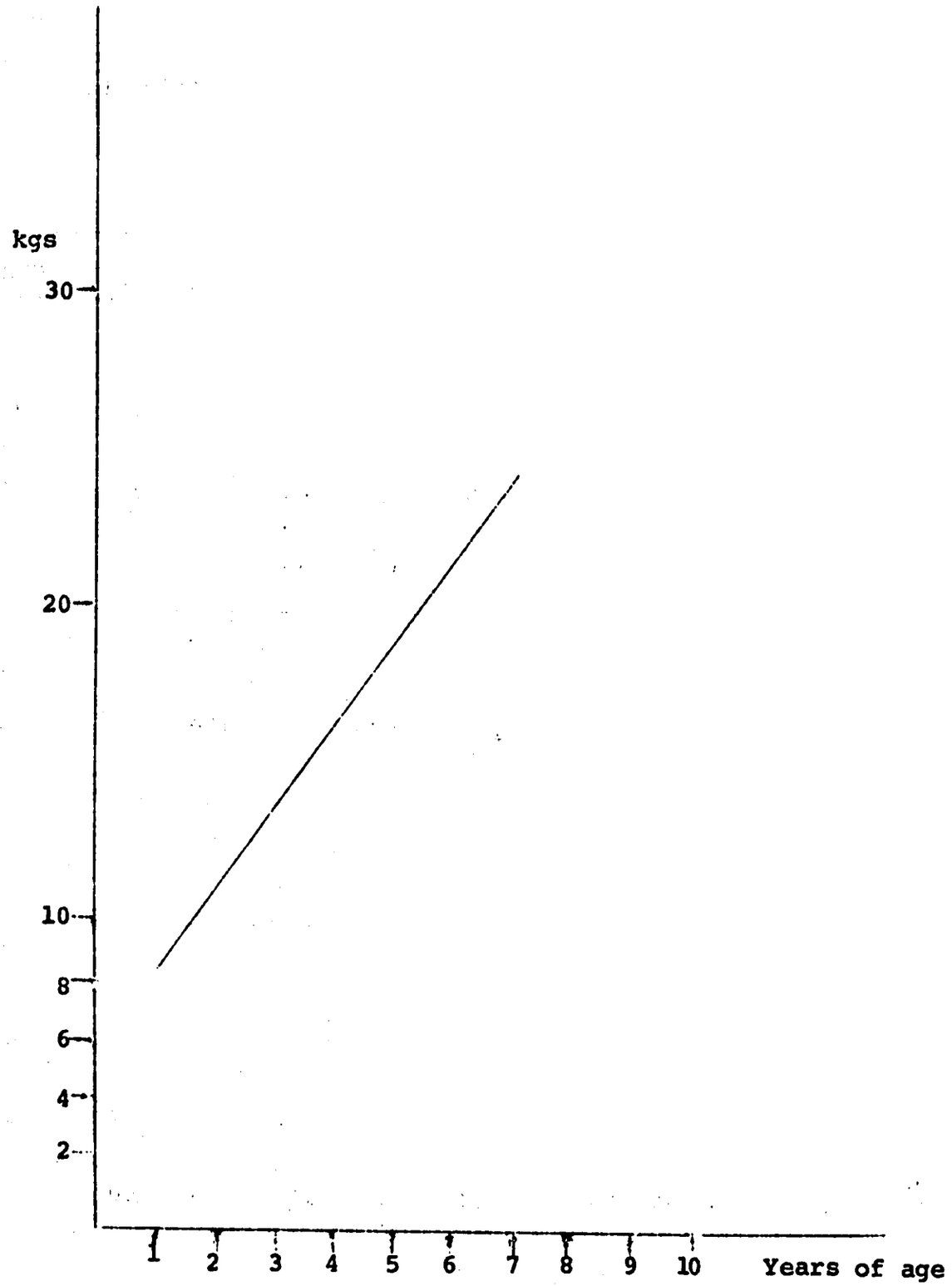

Fig. 1. Average weight of pre-school children in Kabul City (at randomly selected group)

OSTEOMALACIA 1965

A CAUSE FOR OBSTETRICAL CONCERN JAMES C.F. CHAPMAN. M.D.

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One of the most dramatic obstetrical conditions noted in parts of Asia is the great number of women with extreme pelvic contraction. It is generally thought that most often the pelvic contraction is due to osteomalacia.

Maxwell (7) reported on the prevalence of osteomalacia in China and described the obstetrical problems which they encountered forty years ago. However, in the recent obstetrical literature of the Western World, there is scant reference to osteomalacia except for two reports from Israel (5.9) which describe osteomalacia as a rather uncommon complication of pregnancy occurring only among the women of the Bedouin tribes of the Negev Desert.

In Afghanistan these deformed women are frequently admitted to obstetrical services. They are often young despite their multiparity, fertility and desire for many children. They create an obstetrical problem of public health magnitude in Afghanistan. The following report documents our experience with osteomalacia as a complication of pregnancy.

MATERIALS

Most deliveries in Afghanistan occur in the home by trained and untrained midwives. An increasing number of patients now seek hospital care where trained midwives handle the majority of normal deliveries. Our material is therefore weighted by "urgent cases" who seek hospital delivery care in desperation and the outcome often terminates rather tragically.

The reported material represents data from records which were kept at Zaishgah (maternity) Hospital, Sharaharh, Kabul, Afghanistan during 1965. The year 1965 corresponds to a twelve month period of the Persian calendar during the years 1343 and 1344. Zaishgah is a 65 bed hospital that admits only obstetrical and gynecological patients. It is supported by the Rosantoon Child-Maternal Welfare Society and the Ministry of Health of Afghanistan.

Results:

Incidence: During the twelve month study period, there were 2.735 obstetrical deliveries. Of this number 171 were delivered

abdominally, a rate of 7.36% percent. It was not possible to evaluate the less severe degrees of pelvic contraction from osteomalacia as these patients eventually delivered vaginally without the diagnosis ever being made or recorded. Obstructed labor with pelvic contraction due to osteomalacic pelvic deformity was diagnosed in 110 cases (4.8% of total deliveries) and the pregnancy terminated by either abdominal delivery (101 cases) or craniotomy (9 cases). The patients with osteomalacia represented 59 percent of all cesarean sections done at this hospital. The remainder of the sections were performed because of placenta previa, malpresentation,disproportion to fetal size, inertia and other more usual reasons for abdominal delivery.

Age and Parity: The age of these patients was not obtainable since most women do not know how old they are. They frequently mentioned 25, but it was quickly apparent that this was merely a popular answer and had little relationship to the actual age. Actual parity was often not recorded but a parity of over four and a history of progressive dystocis with increased parity was not uncommon. In only two of the 110 cases did the typical pelvic deformity consistent with a diagnosis of osteomalacia occur in a primigravidac.

Diagnosis: The diagnosis of osteomalacia can be easily made once the syndrome is recognised.

There was usually an associated severe kyphosis, and a flexion contracture of the thighs which made it difficult for the patient to walk. Many of these women could not even stand on their legs because of these contractures. The shortening of the abdomen from vertebral collapse often made subsequent abdominal surgery topographically difficult.

Pelvic examination revealed the upper sacrum to be displaced far forward and the side walls of the pelvis protruded convexly in the pelvic convity. The pubic arch was frequently so narrow that pelvic exam was technically impossible. The bi-ischial diameter not uncommonly was less than 5 cm. The net result of these changes was a caved-in pelvis that made normal delivery impossible. A typical deformity is shown in the accompanying Xray.

Blood chemistry studies were carried out in ten cases. In the first four cases blood was drawn while the patient was in labor. The average alkaline phosphates in these cases was 3.77 Sigma units (normal 0.8.2.3) and the average serum calcium was 8.6 mg/100 ml (normal, 9.11). According to Zuckerman et al. (100) the alkaline phosphates is elevated in labor. The serum of the remaining six patients was obtained on the third or fourth postpartum day. The alkaline phosphates then average 15.08 King Armstrong unit (normal, 3,13), and the serum calcium was decreased to an average of 7.05 mg/100 ml. These findings are compatible with the laboratory diagnosis of osteomalacia.

MANAGEMENT

The average duration of labor was, in the cases with severe osteomalacia deformity, over two days and several patients claimed to have been in labor over a week. An undeterminable number of patients with less severe degrees of deformity eventually delivered vaginally after relative degrees of post-osteomalacic deformity.

Twelve craniotomies were performed during the study year, nine of which were done for pelvic contraction due to osteomalacia. This procedure was selected in lieu of laparotomy in cases in which a dead fetus was found lying very low in the birth canal. A vaginal craniotomy is not without hazard, since two ruptures of the uterus were subsequently noted. The trauma of the procedure caused one of these. A traumatic rupture of the posterior vaginal foraix occurred in another case that required emergency laparotomy. Urinary incontinence was frequently, although usually temporarily, associated with craniotomy.

Abdominal delivery was also hazardous since most patients were very anemic and infected. Blood was available in only very limited quantities. Reluctance on the part of relatives to donate blood was also encountered.

One hundred and one (101) patients were diagnosed as having obstructed labor due to osteomalacia and were delivered abdominally. Two-thirds of the sections were primary. Most sections were of the low cervical type, however, occasionally a classical incision was necessary because of the shortening of the space between the xiphoid and the pubis since the patient could not extend her thighs. The Smith exclusion operation was tried in hopes of adding protection to some of the grossly infected cases, but considerable technical difficulties were met with this procedure in these deformed patients. Cesarean hysterectomy was done in about one-fifth of the abdominal deliveries.

RUPTURE OF THE UTERUS

Spontaneous rupture of the uterus occurred twenty-eight (28) times and traumatic rupture following craniotomy twice. Of these thirty ruptures, twenty were directly associated with obstructed labor from and osteomalacia deformed pelvis.

Twenty-two ruptures occurred in the intact uterus and four of these were of the "silent" type. Three of these latter were only repaired, but in eighteen cases hysterectomy was done and one patient died prior to surgery.

Eight patients had a rupture of a previously scarred uterus, but only three of them required hysterectomy and the remaining five were of the "occult" variety and were repaired.

Twenty-one (21) patients required hysterectomy because of rupture of the uterus and one because of uncontrolled bleeding at the time of section. Cesarean hysterectomy was never done solely for sterilization as conditions did not safely warrant such action.

MORTALITY

During the study year twenty-two (22) obstetrical patients died, giving a maternal mortality rate of 80.4 per 10,000. Most of the deaths were due to overwhelming sepsis and shock.

Eleven (11) maternal deaths (50%) were associated with a ruptured uterus due to osteomalacia. Five (5) followed Cesarean sections of an intact uterus and two of these were associated with osteomalacia. Two (2) deaths occurred in undelivered patients with placenta previa; two (2) patients died of eclampsia; one (1) patient died of typhoid fever postpartum, and one (1) from heart failure. Thus, thirteen (13) patients died as a result of osteomalacia. The fetal mortality in this series was not accurately determined or recorded.

DISCUSSION

Osteomalacia is defined as a deficiency disease of bone mineral in relation to matrix. The bones are more soft than brittle and the deformities result more from bending than from fracture (1). It is often referred to as "adult rickets" (9). Opinion now seems agreed that rickets and osteomalacia are the same disease; rickets occurring before closure of the epiphyses in children and osteomalacia occurring in adults. Osteomalacia results from either a deficiency of calcium or of vitamin D. The diet may be deficient in these essentials or the absorption impaired. Rarely, there is an excess phosphate excretion or a deficiency of the enzyme, alkaline phosphatase, which results in altered levels of available bone mineral (3).

The average adult intake of calcium should be about 750 mgm per day. The major portion of this is not absorbed and is excreted in the feces. About 125 mgm is absorbed and this amount is also the daily urinary excretion thus maintaining a balance (6).

The average Afghan peasant woman exists on a calcium deficient diet. It consists primarily of rice, nan (a whole wheat bread) and tea. Lamb and mutton are the only meats that are eaten in any appreciable amount and women share less than men in the inclusion of meat in their diet. Milk and dairy products are not consumed in any regular amounts. Frequent pregnancies and long periods of lactation add to a deficiency of calcium in Afghan women and thus the groundwork is laid for this deficiency disease.

Vitamin D has the ability to increase the rate of calcium absorption from the gastrointestinal tract. This is, apparently, a direct effect of vitamin D on the mucosa to increase the active transport of calcium through the membrane. There are several different sterol compounds of vitamin D and all have the same effect. One form, D3, is found in the skin as a result of irradiation by ultraviolet rays. Consequently, appropriate exposure to the sun prevents vitamin D deficiency.

Vitamin D is also lacking in the diet of most Afghans. The daily adult dietary requirement of vitamin D is probably less than 100 units, as 120 units a day create a positive calcium balance. Ordinary milk contains about 10 units of vitamin D per liter and other dairy products such as egg yolk and butter contain appreciable amounts (4). Meat and fish are good sources of vitamin D, but these are lacking in the diet as noted above.

If sufficient vitamin D is available in the diet, osteomalacia need not occur, but the social custom of avoiding sunlight may play as great a role as dietary deficiency in the etiology of this condition. Dunnigan et al (2) in their studies of rickets and osteomalacia among Pakistanis living in Scotland suggested the relationship of the lack of ultraviolet radiation through social restrictions to the etiology of these conditions. This factor has also been alluded to in the finding of osteomalacia among the women of the Bedouin tribes of Israel. These women hide from the sun in goat skin tents or cover themselves with the "abbaya" a complete body veil which allows no skin exposure (5). Afghan women, similarly, spend most of their lives indoors or completely covering themselves with the "Chadari" when they are outside. This custom shields them almost completely from the abundance of sunlight that is present in Afghanistan. As a result the natural vitamin D that is available through ultraviolet radiation is not utilized. Figure 3 demonstrates two Afghan women in "Chadari".

One, the less self conscious of the two, has shown her veil over her head and her stature likewise reveals a state of robust health. The other women shields herself completely, and her short stature may be a manifestation of osteomalacia.

Although the diagnosis of osteomalacia may at times be difficult and require more refined laboratory and radiologic evidence, the gross disease when complicating pregnancy, is not difficult to diagnose. Bone pain, muscle irritability and tetany are common symptoms. Cataracts are frequently seen in association (3). Radiologic signs include the finding of "Looser zones" and "Milkman's syndrome", which consist of symmetrical grooving of the bones and pseudo-fractures (5). There is generalized radiolucency of the skeleton and various deformities as the trifoliate or "Shansi", pelvis occur. Bone biopsy shows a thin irregular cortex. The subcortical bone is distorted and shows evidence of resorption due to increased osteoclastic and

osteoblastic activity. New osteoid of tissue uncalcified bone is generally evident. The laboratory evidence shows a lowered serum calcium and phosphorous with a product of these figures of less than forty. The alkaline phosphatase is elevated. An avidity for calcium can be demonstrated by a retention of over 65 percent of infused calcium. In the more advanced cases the finding of decreased tubular reabsorption of phosphate (TRP) from the urine is present (3).

Osteomalacia is best treated by the administration of vitamin D and calcium supplements. At least 1000 to 5000 units of vitamin D should be given daily with larger amounts, 100,000 to 200,000 units, used in the resistant cases. Overdosage of vitamin D with resultant hypercalcemia must be avoided, however. The therapeutic range is particularly limited in the presence of kidney damage or physical immobilization. A blood calcium level of over 14 mgm per 100 ml is toxic. Blood level of calcium should be determined periodically during treatment to prevent cumulative overdosage.

Because of the hazards of toxicity with vitamin D, other methods of treating osteomalacia have been investigated. Phosphate infusions and injections of ATP (adenotriphosphate) have been recommended but have failed to produce positive calcium balances (8). Calcium gluconate by mouth as well as calcium rich foods should be provided for absorption.

Adequate treatment will cure the deficiency and show radiologic repair of bone, but the bony deformities that have been created will remain.

Prophylactic treatment in preventing such a deficiency is obviously the only means of combating the contraction of the pelvis which creates these obstetrical problems. However, the reluctance of the people to change social customs and diet makes such prophylaxis, on a large scale, unlikely. Extension of health education and particularly prenatal education is the only possible means of attack. Until this is accomplished, the high incidence of obstetrical problems created by osteomalacia will continue in Asia just as Maxwell and Miles noted forty years ago.

SUMMARY

The experience of one year's efforts (1965) in dealing with the problems of contracted pelvis from osteomalacia in a 56 bed maternity hospital in Afghanistan is presented.

One hundred ten (110) of 2,735 deliveries were so complicated by pelvic contraction due to osteomalacia that the pregnancy had to be terminated by abdominal delivery or craniotomy. The diagnosis and management of these 110 patients is the substance of this report.

The clinical appearance of these patients together with their characteristic trifoliate pelvic deformity made diagnosis easy and it was confirmed by laboratory methods in ten cases. Obstructed labor from this cause resulted in rupture of the uterus in at least twenty cases. Over half of twenty-two maternal deaths during the year were attributed this condition.

The deficiency disease of osteomalacia is discussed with particular reference to its/etiology. The deficiency of calcium and vitamin D in the diet of many Afghan women, as well as the social custom of being veiled, are significant factors in the high incidence of this condition in Afghanistan.

Preventive treatment through prenatal education is the only hope of coping with this problem in the Middle East.

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Kwashiorkor in Kabul and Hyderabad

A Comparison of certain salient features

Azizurrahman Samadi

From Department of Pediatrics, Mirmano Rooghtoar, Kabul University, Afghanistan.

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Kwashiorkor in Kabul and Hyderabad

A Comparison of certain salient features

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From Department of Pediatrics, Mirmano Rooghtoon, Kabul University, Afghanistan.

NUMEROUS descriptions of protein deficiency syndrome, known as kwashiorkor, have been reported from various parts of the world with some regional variation in the clinical picture of the disease. A study of these cases in relation to diet, and to socio-economic and environmental factors may provide some important information regarding the variation of the clinical picture. The objectives of this investigation were to study the clinical picture of kwashiorkor in Kabul, and to compare certain aspects of the disease with those of the Hyderabad (India) series.

METHODS AND MATERIALS

Forty-five cases of kwashiorkor children formed the subject of this investigation. On admission physical examination was done, and a complete history of the patient, including the dietary aspect, was obtained by the author. The blood samples were collected with standard techniques, and immediately within one hour's time were transferred to the Department of Biochemistry of Kabul University for the determination of serum protein, albumin and globulin, by the method of Failing et al.[1]

A. EPIDEMIOLOGY

1. *Age and sex difference*: The incidence of kwashiorkor by age is shown in Table 1, and compared with the Hyderabad series.[2] Of the 45 cases, 20 were male, 25 female.

Table 1. *Age distribution of incidence of kwashiorkor*

Age incidence	Kabul series per cent	Hyderabad series per cent
0- 1 years	4.4	2.8
1- 2 years	42.3	15.0
2- 3 years	33.6	21.5
3- 4 years	11.2	33.6
4- 6 years	8.6	21.5
Over 6 years	—	5.1

2. *Etiology*: As far as the etiology is concerned a thorough personal and nutritional history has been obtained. Table 2 shows the major etiological factors responsible for the disease. These were nutritional inadequacy and diarrhoea. It is important to mention that in 60% of the cases, there was a history of chronic diarrhoea before the development of the clinical picture of kwashiorkor; therefore it should not be considered as the manifestation of the kwashiorkor itself.

Table 2. *Etiological factors of kwashiorkor in Kabul.* (*values in per cent of cases*)

Nutritional inadequacy	Nutritional inadequacy plus chronic diarrhoea	Chronic diarrhoea	Nutritional inadequacy plus T.B.	Chronic diarrhoea plus T.B.
33.3	33.3	20	6.7	6.7

3. *Socio-economic factors*: Almost all of the cases were from the low socio-economic sector of the population. It should be mentioned that not only poverty played its role, but the ignorance of the parents, and environmental factors are contributing factors in the pathogenesis of the disease.

B. Clinical Picture

1. *Oedema*: Kwashiorkor children showed different degrees of Oedema. Table 3 illustrates the percentage of the cases.

Table 3. *Degrees of Oedema in Kwashiorkor children.*

Degree of Oedema in kwashiorkor children		
1 =	2 =	3 =
71.1%	15.6%	13%

1 : Oedema of the lower extremities.
2 : Oedema of the upper and lower extremities.
3 : Oedema of the upper and lower extremities, with Oedema of the face.

2. *Weight*: Table 4 shows the body weight of kwashiorkor children in Kabul, distributed by age, and is compared to the Hyderabad series.[3] The mean body weight of kwashiorkor children in Kabul was under 8.3 Kg., irrespective of the age.

3. *Mental changes*: Irritability, apathy and peevishness were observed in 89% of the cases.

4. *Skin changes*: Skin changes were observed in only 3 cases. Two of these showed mild hyperpigmentation, and one case had scaly lesions. (Table 5)

5. *Hair changes*: Hair changes such as discoloration of the hair were observed in 80% of the kwashiorkor children in Kabul. In addition to the discoloration of the hair, thinning of the hair was observed in about half of these cases. (Table 5)

6. *Vitamin A deficiency*: Signs of vitamin A deficiency such as photophobia, xerosis and keratomalacia were observed in five cases of the children under observation. Two out of the five cases had photophobia and xerosis, the other three had severe keratomalacia with photophobia. It is worth mentioning that symptoms of vitamin A deficiency were only seen in the kwashiorkor cases who were over three years old. (Table 5)

7. *Vitamin B complex deficiency:* Signs of vitamin B complex deficiency such as cheilitis and angular stomatitis were observed in 22.2% of the kwashiorkor children. (Table 5)

8. *Hepatomegaly:* Moderate liver enlargement was observed in only 2 cases, or 4.4%. (Table 5)[2]

C. Chemical Findings

Table 6 shows levels of serum protein, serum albumin and serum globulin in the kwashiorkor children of Kabul, and

Table 4. *Body weight in Kg. of kwashiorkor children*

Age group in years	Kabul series			Hyderabad series		
	Number of cases	Mean	Range	Number of cases	Mean	Range
0-1 years	2	3.40	2.60-4.20	--	--	---
1-2	17	6.09	4.40-7.90	12	5.82	4.55-7.73
2-3	17	6.33	4.20-8.40	10	7.00	5.45-11.14
3-4	5	6.76	6.30-7.20	19	6.64	5.00-9.55
4-5	4	8.30	7.40-9.00	13	7.00	4.77-10.11
5-6	---	---	---	7	8.27	5.91-10.91

Table 5. *Differences observed in various features of kwashiorkor, between the Kabul and the Hyderabad cases*

	Vitamin A deficiency	Vitamin B complex deficiency	Skin changes	Hair changes	Hepatomegaly
Kabul	11.1	22.2	6.7	80.0	4.4
Hyderabad	32.0	34.0	55.0	32.0	23.0

Table 6. *Serum protein, albumin and globulin values*

	Number of cases	Mean gm. %	Range gm. %	Number of cases	Mean gm. %	Range gm. %
Serum protein	45	4.54	2.70-6.40	46	4.79	2.23-7.39
Serum albumin	45	1.86	0.70-2.90	46	2.01	1.05-33.50
Serum globulin	45	2.68	1.28-4.20	46	2.78	---

the comparison with the Hyderabad series.

Discussion

The peak incidence of kwashiorkor in Kabul is between 1 to 3 years. This observation is in the same line with the Coonoor and the Uganda series. In the Hyderabad series the peak incidence is between 2 to 4 years[3] however, the incidence of the disease among children over 4 years is also relatively high. As far as weaning habits are concerned, although the infant of low socio-economic sector in Kabul is weaned very late (up to 1½ to 2 years), some of them receive from seven months onward some supplementary foods. These are no more than unmodified versions of certain parts of the family diet, such as small quantities of bread, vegetables, rice and tea. So this habit of weaning without protein-containing supplementary diet may be responsible for the peak incidence of kwashiorkor among children between 1 to 3 years, because this is the period that protein and caloric requirements of the child are not met with by breast milk and the above supplementary diet. On top of undernourishment another contributing factor at this period is the high incidence of frequent episodes of diarrhoea which often becomes chronic and develops the clinical picture of kwashiorkor. To account for the high incidence of kwashiorkor in children between 2 to 4 years and over 4 years in the Hyderabad series, pulmonary tuberculosis had been thought as a contributing factor, whereas in the Kabul series the incidence of tuberculosis was observed only in one case whose age was over 3 years, the other cases being under 3 years. The incidence of kwashiorkor in infants under 1 year in Kabul series is nearly double that of the Hyderabad series. The author believes that the shortage of breast milk due to maternal undernourishment may be the responsible factor in this age group.

The occurrence of kwashiorkor among low socio-economic groups is in line with the reports of other workers from different parts of the world.

In both series, the mean body weight of kwashiorkor children at all ages was lower than 8.30 Kgs. This observation is in the same line with the author's previous finding in Hyderabad.[4]

The incidence of vitamin A deficiency in the Kabul series (11.2%) was much lower than in the Hyderabad series (32.6%). The relative low incidence of vitamin A deficiency in the Kabul series may be due to long term breast feeding which may just meet the vitamin A requirements of the child. Also this observation that signs of vitamin A deficiency in the Kabul series were only observed in children over three years of age, of which four out of five cases had chronic diarrhoea and must have interfered with the absorbtion of vitamin A, would support the above suggestion for relatively low incidence of vitamin A deficiency.

The incidence of vitamin B complex deficiency in the Kabul series is much lower than in the Hyderabad series. Although some workers from India[5] and Africa[6] showed that the higher incidence of skin changes in kwashiorkor children was associated with the higher incidence of oral vitamin B complex deficiency, such connection was not observed in the Kabul series. However, the incidence of skin changes and signs of oral vitamin B complex deficiency were quite low in the Kabul series, for which a definite conclusion cannot be made.

The incidence of hepatomegaly in the

Kabul series was 4.4% while in the Hyderabad series it was higher. This observation is in the same line with that of Trowell.[7]

The incidence of hair changes, such as discoloration and thinning of the hair, was quite high in the Kabul series (80%); while in the Hyderabad series it was reported to be 32%. Since the exact pathogenesis of hair changes in kwashiorkor is unknown so far, it is difficult to suggest a definite responsible factor for this regional difference. This is a good field for further investigation.

Our observations showed that serum protein in the Kabul series is low, which is in line with the Hyderabad series. The mean serum albumin value is low but is in line with the Hyderabad series; however, the range in the Kabul series starts at a much lower value than does the Hyderabad series. As far as serum globulin is concerned, the relative value is high in the Kabul series and is in line with the Hyderabad series.

SUMMARY

A group of kwashiorkor children from Kabul has been examined. Clinical and biochemical aspects of this disease have been studied and compared with the Hyderabad series. The regional variations are presented and a few points have been discussed.

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Appendix IV-E

REPORT on the FIRST NOOR EYE CLINIC held in BAMIYAN in AUGUST, 1968.

On the invitation of the Governor of Bamiyan, His Excellency Nasrat Malikyar Khan, and at the request of the Royal Afghan Ministry of Public Health, the first large-scale eye clinic ever to be held in Bamiyan took place from August 1st through 19th, 1968. In view of the number of patients expected for surgery, special arrangements were made for in-patients to be housed under canvas. The camp site was located near the feet of the larger "Buddha", with easy access to the bazaar.

ACKNOWLEDGEMENTS

We wish to record our gratitude to the Governor of Bamiyan for the supply of poles and labour, and to Mr. Paul A. O'Daniel and Mr. M.L. Kellogg of U.S. AID for the kind loan of tents and canvas sheets, through all of which we were enabled to erect operating, examining and waiting rooms, and in-patient accommodation.

We further acknowledge with thanks the supply of anaesthetic ether from Bamiyan Hospital.

We would further express our gratitude to the local police who rendered much assistance and guarded the camp and equipment night and day for the three weeks, and finally to the nine volunteer workers who gave up a month of their vacation to assist during this clinic.

STATISTICS

Record cards were kept for every new patient attending this clinic. From these the following facts and figures emerge:-

Total number of new out-patients registered	= 812
Total number of second visits (approx.)	= 120
Number of school children examined	= 931
Number of school teachers examined	= 16
Total number of patients seen (excluding second or subsequent visits)	=1,759
Number of surgical operations performed	= 120
Number of general anaesthetics given	= 4

Trachoma Survey of School Children

Total number examined	931
Number clear of conjunctival lesions	14.2%
*Number with follicles and/or pannus or other evidence of keratitis	85.8%*

* This seems an unusually high figure to us. It is based on a clinical examination of about one minute's duration employing focal illumination and a loupe. Smears were not taken, nor conjunctival scrapings and nor was a slit-lamp microscope available to us, so that an accurate differential diagnosis from other causes of follicular conjunctivitis was not always possible. However, it is certain that 10% had trachoma in stages III or IV.

Vitamin A Deficiency

This condition was diagnosed (and in some half of the cases definitely confirmed) in some 35 patients. It seems to be due to the relative shortage for a large part of the year of green vegetables.

RECOMMENDATIONS

1. That all children in the Bamiyan schools be given an annual course of trachoma treatment. Can this be done?
2. That the value of carrots and dark green vegetables, such as spinach, be stressed for the treatment and prevention of seasonal night blindness. This could be done through schools, health centers and in radio talks.

RECORDS

The record cards of all patients seen are filed in Kabul and the detailed statistics of diagnoses, etc. are availble if required.

Respectfully submitted,

John D.C. Anderson.

BAGHLAN TOWN SURVEY (1969)

This survey was conducted by the Afghan Midwife at the MCH center in Baghlan under the supervision of the Peace Corps Volunteer nurse, Miss Mary Simpson. The survey was to find out something about the families in Baghlan Town and also to make the women of the area aware of the services available at the MCH center. At the present time 103 households have been surveyed; however, Miss Simpson hopes to eventually be able to cover the whole town.

In addition to information about the name of the head of household and the location of the house, the following questions were to be asked:

1. Number of people in the household.
2. The job of the head of the house.
3. Salary or the families' total monthly cash income.
4. Number of Wives.
5. Whether the wife is pregnant.
6. Number of living children.
7. Number of children who have died.
8. Cause of death.
9. Number of children in school.
10. Number of rooms available to the family.
11. Whether the household has received smallpox and BCG vaccination.
12. What kind of sickness there has been in the family.
13. Source of the water supply.
14. Location of the water supply; i.e., is it near a latrine, etc.

Although all these questions were listed there was no information given on No. 8 (cause of death), No. 9 (No. of children in school), No. 12 (sickness), and No. 14 (location of water supply).

From the 103 households so far surveyed, the following information was obtained:

1. The average size of the families was 5.9 people per household with a range from 2 people per household (8 families) to 15 people per household (2 of the families surveyed).

2. Since this survey was conducted in a town, the occupation varied greatly and included government servants, shopkeepers, skilled laborers, etc.

3. Ninety-five of the 103 families surveyed answered the question on salaries and the average amount of money coming into these families was Afs. 1,595 per month. The highest salary noted was Afs. 10,000 per month (a judge) and the lowest was Afs. 500 for laborers and street vendors.

4. There were 11 plural mariages in the 103 families (11%). All the plural marriages noted had two wives except for one land owner who had four wives.

5. At the time the survey was taken, 18 women were pregnant. There were also 9 families who did not answer this question. If we assume that a blank indicates that the woman is not pregnant this means that roughly 18% of the women were pregnant.

6. In the houses surveyed, there were a total of 371 living children which makes an average of 3.6 children per household. The largest household had 11 children and the smallest had only 1 child (11 families). There were also 11 families who indicated that they had no children.

7. There were 8 reported premature babies who died and 88 children who died sometime after delivery. Unfortunately, there were 19 families out of the 103 surveyed who did not answer the question concerning deaths of children so in all probability this figure of 96 deaths is low. Even so, however, this still means that there is a mortality rate of about 200 per 1,000 pregnancies. The infant and premature deaths were reported in 36 of the 103 families with 21 of these 36 families reporting more than one infant/premature death.

8. On an average, there were 2.8 rooms available for each household, which means an average of 2.1 people per room.

9. Of the families so far surveyed, only 8 indicated that they had been vaccinated against smallpox and T.B.

10. Thirty-six of the families indicated that they got their water from a well, 58 got their water from a "jui" (an open ditch used for drainage, irrigation or household water), 2 families got their water from a river, 1 family from a spring, 3 indicated that they boiled their water and 3 families gave no answer.

APPENDIX VI a

CURRICULUM AND TEXTBOOK PROJECT
USAID/A - TCCU
MINISTRY OF EDUCATION
KABUL, AFGHANISTAN

Mitchell Owens
Health Section
September 18, 1969

TEACHER'S GUIDE FOR WHAT YOU EAT

Food, like water is necessary for life. In order to choose the right foods to eat, one must have knowledge about the composition and function of the foods. The body is made up of carbohydrates, fats, proteins, minerals, vitamins and water, all of which are constantly being used. In order for the body to keep proper balance, it is necessary to replace the foods we eat and drink. The three primary functions of foods are, (1) to supply the body with fuel for energy; (2) to provide the materials for building and repairing body tissues; and (3) to furnish the substances by which the body functions and processes are regulated.

The students learned about digestion in Chapter 3. In this chapter they will study about the foods they need to eat in order to become strong and to stay in good health.

This chapter gives illustrations of the three kinds of foods, carbohydrates, fats, and proteins and discusses how they are utilized by the body. It also lists some of the minerals needed by the body and mentions some foods where they are found.

The student will study a few of the more important vitamins and should learn the sources of these vitamins.

At the end of the chapter a diagram shows the student how to keep a simple daily food chart to check on his eating habits.

I. Objectives

1. To help the students to understand the relationship between a proper diet and good health.
2. To help the students to understand the three groups of foods; proteins, fats, and carbohydrates.
3. To help the students to understand the primary function of the three groups of foods.
4. To help the students to understand the primary sources of the three groups of foods in Afghanistan.
5. To help the students to understand the purpose and source of certain common minerals required by the body.
6. To help the students to understand the source and function of some of the common vitamins.
7. To help the students to understand that certain diseases such as goiter, anemia, and other diseases are a result of improper diet.
8. To help the students to think about and consider the adequacy of his own diet.
9. To give students enough information about foods and their function so that they will want to improve their own diet.

II. Anticipated Outcomes

1. That the students will talk intelligently about foods and nutrition.
2. That the students will know that good health depends on the types of food he eats.
3. That the student will attempt to eat the necessary foods for food health.

4. That the student will desire to eat foods that will help him to grow.
5. That students will understand that foods are grouped according to protein, carbohydrate, and fat foods.
6. That students will desire to regularly eat foods from each of the food groups.
7. That the student will want to eat foods containing the common vitamins and minerals necessary for good health.
8. That the students will understand something about diseases caused by improper diets and will want to eat foods to prevent these diseases.
9. That the students will attempt to choose local foods containing some of the necessary vitamins and minerals.
10. That the student will know that one good source of vitamin D is sunshine and will want to get an adequate amount.
11. That the student will want to eat a balanced diet.

III. Suggested Class Procedure

1. Read and reread the chapter carefully.
2. Underline new words that you believe the students will not know.
3. Study the teacher's guide and supplimentary teacher information on nutrition.
4. Write all new words on the blackboard, and pronounce and define them before assigning part of the chapter for reading.
5. Have students to record all new words in their worn notebook and to write a sentence using each of the new words.
6. Assign part of the chapter for silent reading. Do not assign too much.

7. Ask certain students to read part of the chapter aloud. Discuss the chapter as the students read.
8. Ask students questions as the chapter is read aloud and discuss the main points thoroughly.
9. Ask students to list various types of growth foods. Emphasize growth foods that can be obtained locally.
10. Have a discussion of the available, local carbohydrate foods.
11. Ask students to list the local foods that contain large quantities of fats.
12. Ask students to discuss their eating habits and patterns. Is this indicated by the body structure of some of the students? For example are some of the students fatter who eat large quantities of carbohydrates and fats? Also do some students have large bone structures who eat large quantities of proteins? Heredity, as well as eating habits, plays an important role in body or bone structure.
13. Ask the students if they have seen anyone with goiter. Ask them to describe the person's appearance. Was their description similar to the illustration of the man with goiter in the book?
14. Ask the students to list foods containing some of the minerals such as calcium and phosphorus.
15. Ask the students to list important local sources of vitamins A, B, and C.
16. Ask students how they can get vitamin D. The sun is always an available source in Afghanistan.

17. Ask the students to keep a weekly chart of what foods they eat for one week. Tell them to include what they eat between regular meals. Ask the students to make a comparison between their charts. Some students may want to keep a chart over a longer period of time.
18. Ask the students how many of their families have gardens. Discuss the types of foods that can be grown in local gardens. Can you help the students to find some of the food values of some of the local foods? Ask how many of the students are interested in planting a small garden near their home or helping their family to plant a garden. The students should be encouraged to plant gardens at home or to help their parents plan a garden since gardens are such a good source of inexpensive healthful foods. You might also encourage the students to plant fruit trees.
19. Review the chapter after it is completed. Ask students if there are any parts not understood thoroughly. Stimulate class discussion by asking questions.
20. Review all new words again. Again ask students to pronounce, define and use them in sentences.
21. Give test that emphasizes the objectives of the chapter.
22. Review test results with students and be sure that they understand the correct answer to each question.

Organizations and Representatives of Organizations Contacted

Ministry of Public Health

Dr. Abdullah Omar, Deputy Minister

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Dr. G.H. Maher, Director, Preventive Medicine

Dr. Abdul Mohammad, Director, Small Pox Eradication

Miss Fahima Ursela, former Director, Nursing Division

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Dr. Wasil, Director, Public Health, Baghlan

Dr. Farouq Yacoubi, Director Basic Health Services, Baghlan

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Afghan Family Guidance Association

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In addition to the above contacts, the CARE team also had the opportunity of meetings and discussions with Peace Corps Volunteers, Medical Assistance Program team members, the CARE/MEDICO team, German Volunteer Service members, staff members of the U.S. Embassy, USIS and USIE (Fulbright Commission), with representatives of the Asia Foundation and with the editorial staff of the Kabul Times. We are grateful to all of these people for informaiton, help and advice.