NUTRITION CRSP KENYA PROJECT TRIP REPORT

July 19 to September 9, 1984

Dr. Charlotte G. Neumann, Principal Investigator

Dates:

July 19 through September 9, 1984.

Purpose:

To evaluate overall field work progress quality problems.

To systematically evaluate each functional area.

To focus on data collection in the morbidity area, immunology and food composition analyses data management.

To summarize available data by hand calculation for energy intake, anthropometry, resting metabolic rate and morbidity for immediate feedback.

To evaluate impact of drought and famine conditions on study households in part of the study area.

To meet with government officials concerning the famine conditions and help mobilize relief aid and set up a rehabilitation unit.

To make some preliminary contacts in regard to future appropriate intervention in the study area community.

To finalize arrangements with the new Immunologist and Virologist and food analysis laboratories in Nairobi.

To arrange for shipment of frozen specimens to UCLA for quality control and breast milk and saliva specimens to Dr. Chandra for analysis.

People Visited
USAID

Dr. Rose Britanak - Health Officer

Mr. Gladston - New Mission Director, USAID/Kenya

Mr. Charles Mantione - Health Officer

It is with great regret that we learned of Dr. Britanak's leaving USAID. She has been a great support to the Nutrition CRSP from the onset and has been extremely helpful to us throughout. Dr. Britanak arranged a meeting with the new mission director, Mr. Gladson, who was helpful about the project. He was most eager to receive our assessment of the famine situation in our study area as an USAID Task Force was trying to evaluate the situation in

regard to the need for food aid. Monthly food intake and nutritional status information was requested by USAID/Kenya on a monthly basis. Mr. Gladson expressed great interest in coming to visit the study site.

Ford Foundation

Dr. Goran Hayden was briefed about the Nutrition CRSP project with a view toward future support for an intervention phase. He informed us that the Ford Foundation's main current focus is in the "under five's" population with the focus on "child survival." He indicated that he would like to be kept informed about the project and an invitation will be sent to him for the January 1985 review meeting in Embu.

Meals For Millions - Applied Nutrition Program

The headquarters and project site were visited in Kisumu. The Applied Nutrition Program approach as envisioned and operationalized by the MFM may be appropriate in the study area perhaps as a future mode of intervention. Since MFM is interested in expanding in Kenya it was felt to be very worthwhile to see their field project. MFM foundation has an impressive program.

Functional Areas
Morbidity

Considerable time was spent with the physician, the supervising cluster community nurses, and the enumerators visiting homes during data gathering, and in consulting on sick individuals. The entire morbidity coding process methodology and process of inservice training and quality control were reviewed.

A second physician is badly needed. One physician cannot handle the load and do an adequate job. The Kenyans have still not assigned a full time physician. Advertising has yielded no one, therefore, UCLA now has had to hire a second physician at great added expense.

Coding problems and some personnel problems were resolved and two of the nurses were rotated to different clusters. Quality control procedures were reviewed, revised and enforced.

Immunology

Dr. T. Bowry was replaced by Dr. D. Koech, a very well trained and enthusiastic immunologist with an excellent laboratory. His head technician, Mr. David Iha, was trained by Dr. Stiehm in cellular immunology techniques and he in turn trained our Embu technicians Mr. W. Mugisha and S. Kuria. Dr. Koech's laboratory is now actively doing all immunoglobulins, albumin, prealbumin, C_3, transferrin and C-reaction protein. Dr. Stiehm will do a replicate 5-10% subsample for quality control and test specimens of known content will be sent to the labs in Kenya.

T-cells are being done in Embu with quality control replicates done by David Iha. Also separated lymphocytes on twenty study subjects were frozen using a process and sent to Dr. Stiehm's lab for quality control purposes. The results will be compared to those of the Embu laboratory. This processing of lymphocytes was done by a medical student, Miss Ochs, on a volunteer basis.

Resting Metabolic Rate (RMR)

The Beckman Metabolic Cart (MMC) had its calculator unit replaced and calibrated and after being out of commission for three weeks, it became operational again in September. A new generator had to be purchased as the Kohler broke down and could not be repaired.

The third cycle of RMR's is now in progress. These are being done on schoolers, lead females, lead males, and pregnant and lactating women.

Cognitive Testing/Behavioral/Activity Observations

With able supervision of the field psychologist Ms. Susan DeSouza, this aspect of the research is progressing well and on schedule.

i. All the 18 months olds have now been tested.

ii. The toddlers are now reaching 24 months and are having the 24 month battery of tests done.

iii. Newborns are having Brazelton testing done at 8 days of age.

iv. Infant memory test, the Fagan test, has been successfully piloted and is being applied to infants as they turn six months of age.

v. Toddlers at 24 months are having visional acuity tested by the "Preferential Looking Test."

vi. Piloting has been completed for 30 months testing due to begin in December/January 1985. Over 150 lead males and females have been tested. Validation of all the above testing is done on an ongoing basis with agreement in acceptable range.

vii. All schoolers, 120, have all been tested at least once. The second round began in November.

Observations

Maternal-infant and maternal-toddler interactions are observed every two months. Child care giving observations are being made every three months. These observations are validated whereby the supervisor does simultaneously observations and scores these independently. These show good agreement with the enumerator observations.

School age children are observed for behaviors in the classroom and in the schoolyard. One round of observations was completed last Spring. School grades and class standing have been recorded concurrently with the periods of testing.

Pregnancy Studies

The target number of pregnancies for the study are 150. However, the Kenya Nutrition CRSP would like to extend the pregnancy study so as to follow pregnancies which occurred after the period of food shortage.

As of September, about 50 infants have been born into the study. Only a few births have been missed because of breakdown of communications from the household to the project.

Pregnancies have been followed since 3 to 4 months in all cases. One earlier group was taken in at 8 months of pregnancy for piloting purposes.

Examinations, anthropometry, laboratory tests on hematology and ferritin and RMR have been obtained and the neonate is examined within 3 days, and Dubowitz test for gestational age is done by the physician or a specially trained nurse. The majority of infants are being born in the Kararumo Health Center, Embu or Kyeni Hospital, or in the public health centers.

The infants will be monitored closely to be certain that they receive DPT, Polio, and BCG immunizations at the appropriate times. The Health Center has requested that their staff give the immunizations and the regular child health supervision.

Food Intake

Food Intake data collection is going well. The information collected during the famine situation did indeed confirm that about 1/3 of the households were suffering from severe food shortages. This resulted in people cooking unripe paw paw and mango in some instances and the lead male and female spending long days away from home seeking employment so they could buy food or food stuffs. In many of these households, intakes ranged from nothing for a given day to adequate amounts of food. A frequent pattern of intake was little or no intake on one day of data collection to relatively greater intake on the next day. This will make for high variance figures. The maximum shortages occurred in the lower third of the study area, Kararumo Cluster IV. The decreased food intake was reflected in the anthropometry and the appearance in toddlers of severe to moderate PEM in about 15 children.

New food intake forms have been developed to allow reporting of intake data in terms of recipes, recipe ingredients and actual intake reported in grams. Also, data collected on the category of the type of person eating will allow consumer units to be collected. A team of calculators are converting actual intake data into grams. A program is being developed to perform the conversions. Also, at UCLA an available computer program in the Nutrition Division will be used to convert the data into nutrients based on USDA values. As Kenyan food values are obtained these values can be substituted for USDA values. A brief comparison of USDA values shows that they are similar or identical to published data on African Foods. The biggest problem is the absence of some Kenyan foods from the USDA list.

Food analysis of local Kenyan foods is being done at the Kenya Medical Research Institute with only proximate analyses being done. Plans are being made to analyze composite diets at the International Atomic Energy Commission for all the elements in the food tables.

Anthropometry

Measurements are being obtained monthly with periodic standardization tests to monitor the quality of the data. A cursory review of all anthropometry from January through May revealed that about 25% of children under 5 years had not gained weight or actually lost weight. Adults also had experienced weight loss and diminishing fat folds in about 20%. Review of data from June through September has shown that this trend has lessened considerably.

A rapid clinical survey for clinical malnutrition was done in August by the Principal Investigator (CN) and the field director and revealed that about 12 toddlers had developed severe protein calorie malnutrition and that intervention was necessary. The total number to date of toddlers who have been so affected by the food situation is twenty.

Drought/Famine Situation

Because of the dwindling food situation in the general area, and famine conditions in a number of study households, the project decided that for ethical and humanitarian reasons and to maintain the ongoing cooperation of the study households. Several hard hit households had begun refusing to answer questions, and would not come for physical examination or allow blooddrawing, claiming they were too weak.

The project shared the food intake and anthropometric data with the local administration and government ministries and USAID to make them aware of the situation in Embu. Through the Office of the President a task force was sent to visit the Project to learn more about the situation. A local district famine committee was formed under the Office of the President.

Through untiring efforts of the field director (Dr. Carter), food stuffs were located and the World Food Program delivered tons of maize for household distribution to the entire community. The Project supplied transport for the grain and the local famine committee distributed this to households. The imported maize would have taken three months to reach the area.

In anticipation of the rains which did come in late October, a search for seed was made. None was available from the government, and it became apparent that people had eaten their seed for food and there was little available on the market.

The project managed to locate seed on the open market, purchased this and again distributed maize and bean seeds through the local famine relief committee in time for planting just as the rains came. Harvest is expected in March.

Dr. Jansen has enlisted some financial help from the Dutch Embassy and Dr. Eric Carter from UNICEF to partly cover the costs of relief efforts. An emergency nutrition rehabilitation center was set up at the local hospital (tent and cots) to treat the children who had developed severe protein energy malnutrition. We wished to keep them off the general hospital wards where they were in danger of being infected and mothers could also be admitted with them to care for and feed the children to recovery. This low cost operation has been serving the general community and is a valuable low cost model.

As the toddler sample in the study was over 130 the remaining sample of about 110 toddlers is not endangered. Food intake measurements on the households identifies the relief food and the gift food and despite this addition households are at suboptimal energy intakes. However, only a few severely malnourished children are now being seen in the study households as of the anthropometry report of November 1984.

External Evaluation Panel Visit

Dr. Philip Payne, chair of the EEP and Dr. Gerald Keusch visited the Embu project site from Sept. 2 through 7. They visited all aspects of the field work, the data management unit, examined the administrative and fiscal procedures and laboratories. They interviewed Kenyan and American personnel at all levels. The visit turned out to be a very positive experience pointing out areas of strengths and weaknesses in a constructive way. They helped staff gain perspective of the larger issues of the research and the policy potential of the data. In the day to day running of so large and complex a field operation there is often little time or energy to discuss the overall objectives and goals and the potential of the Nutrition CRSP project. The EEP rightly pointed out that there was not enough feedback of data to the field to stimulate this kind of discussion.

Accordingly a review meeting is being planned in Embu to which all interested Kenyans from government, university, and foundations will be invited.

The next trip to Kenya will be in January to introduce new personnel who are replacing current staff, and to review data collection, management and quality control.

Dr. Eric Carter and Dr. Dorothy Cattle are eaving the project after three years of dedicated work. A new physician will be joining the project as no Kenyan phsician could be spared for assignment to the project.

Dr. Eric Carter deserves the highest commendations for his untiring work in implementing a tightly run field operation under extremely difficult field conditions and for his and Dr. Jansen's humanitarian efforts in being very instrumental in obtaining relief for the famine stricken portions of the Embu area.

Travelling in January 1985 are:

From USA to Kenya:

Dr. Gerald Gardner

Mrs. Anne Coulson (via Cairo)*

Dr. Charlotte Neumann (via Cairo)*

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*For data review and analysis meeting of SCB members.

From Nairobi to Cairo*

Dr. Eric Carter

Dr. Nimrod Bwibo

Also Dr. Hugh Horan will be visiting the project in January 1985 and Dr. George Beaton in February 1985.

Respectfully submitted

Charlotte J. Neumann