

## Wimpfheimer-Guggenheim Essays Competition

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*Winning essays from 2000 – 2009*

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**2000**

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## **Improving Nutrition Through Permaculture in Malawi**

*By: Stacia M. Nordin, RD*

### **Overview**

In Malawi, health is directly dependent upon the environment as over 90% of the people living in Malawi fulfill their nutritional needs through subsistence agriculture. If the environment around them doesn't supply the food they need, then they do not eat. Despite this, we are finding that current agricultural systems are destroying the very soil that plants depend on to grow, making it more difficult every year to extract a yield. Permaculture can be a useful approach for improving the environment around us while at the same time providing us with food and healthy water, in addition to medicines, fuel and building materials. In Malawi we developed a program based upon the principles of Permaculture to restore both nutritional and environmental health.

The Permaculture Nutrition program activities include:

- Promotion of local foods through seed collections, establishing permanent gardens and demonstrations on using and identifying the local foods.
- Courses to allow people to understand and learn methods of Permaculture Nutrition.
- Developing a training manual with supplemental teaching aids so others can have a base of teaching tools to work with.
- Compiling a field guide of local foods in Malawi. This field guide will be used by extension workers to teach Malawians and expatriates about the abundance of foods Malawi has and how to utilize them.

### **What is Permaculture?**

The word "Permaculture" is the combination of the two words "permanent" and "agriculture." Two Australian men named Bill Mollison and David Holmgren coined the term in the 1970s. It is an agricultural philosophy that allows us to use the resources that we have around us to their fullest potential. By observing and learning from our environment, such as how nature replenishes its soil, how nature protects and conserves its water resources and how nature has adapted to the specific climate of an area, we can learn how to imitate these natural processes when we are designing our farms or gardens. The more closely that we can work with nature, the more likely we are to establish a balance which will provide us with the things that we need without hurting the environment. One of the founding fathers of Permaculture, Bill Mollison, has defined Permaculture as "the conscious design and maintenance of agriculturally productive ecosystems, which have the diversity, stability and resilience of natural ecosystems."

Permaculture has a useful saying that can help to point us all in a more positive direction: See Solutions, Not Problems. Although we have created a number of environmental and health problems in this world, it is not too late to restore health in our bodies and in our environment. To do this we will need to change our thinking about our place as humans in this world and realize that we are part of nature, not above it. We currently see humans all over the world trying to control the environment around them, when instead, if they just live with nature, it will provide them with all that they need. To us, this is what Permaculture is all about — living within the cycles of nature.

### **Why Use Permaculture to Improve Nutrition?**

In Malawi, we began to notice a relationship between the emphasis on maize, activities that are leading to environmental degradation and the resulting nutritional problems we are currently seeing. The agricultural systems that are being promoted now involve planting solely maize in combination with fertilizers and chemicals to attack insects and other plants that may interfere with maize growth. This system is unhealthy for both the human body and for the environment. The body needs to eat a variety of different plant foods in order to maintain health, just as the environment needs to contain a variety of plants to maintain its healthy balance. Permaculture emphasizes learning about and imitating these natural systems of variety and balance to provide for all our needs, and by doing so, it provides us with the diverse diet that we need for health.

### **Improving Nutrition Through Promoting Local Foods**

In the past, Malawi's environment and diet revolved around a wide variety of local fruits, vegetables, nuts, seeds, millets, sorghums, roots and various animal foods. Although many of these foods are still available, they are vanishing quickly because of the push to supply maize year-round either by forcing that land to produce it or by bringing in maize aid when the environment is unable to meet our maize demands. Maize is not the only culprit, people are becoming more interested in obtaining the foods of the west than in giving attention to the abundance of foods right around them. Expatriates who come in to "help" often never take the time to learn about these valuable food resources that are already here. These local foods that are being crowded out by maize and western foods are higher in nutrients than western foods, are available with no work or money and are delicious! Our project has categorized over 500 plant foods available in Malawi that are able to meet all the nutritional needs of people living here and we are trying to revive the knowledge of these plants. Slowly we have been collecting these food plants, sharing the seeds, teaching about their importance in nutrition and the environment, using them in our own meals and encouraging their use for anyone living in Malawi. In two years, we have established over 150 different local foods just in one small half-acre plot, in addition to other plants that can be used for fuels, medicines and building materials. Many places in Malawi are now establishing similar gardens of local foods because of our program — at health centers; at nutrition rehabilitation units; in villages utilizing "gray" water from washing clothes, dishes or bathing; at the end of wells where water often sits in a large puddle; at mission hospitals; for AIDS patients; at schools — the list goes on. We are now

beginning to document these Permaculture Nutrition activities that are taking place so that we can share with others the potential that the environment has if we work with it.

## **Teaching Through Courses and Sharing**

One way that the project has been teaching about Permaculture and nutrition is through a week-long course that we developed. In the course, we look closely at the cycles in nature and how each part of it works — the soil, water, trees, plants, insects and animals. We examine what we as humans are doing to interfere with nature, but more so, what we can do to protect the nature cycle so that we can benefit from it. We also look closely at nutrition: how the human body works, what it needs, and how we can provide what we need through nature. A key component of these courses is understanding. A wise person once noted,

*People will not preserve and protect a natural environment which they do not understand or respect. When people learn about the relationship of all forms of life to each other and to the earth, they begin to have a responsible attitude toward natural resources and their wise use.*

Where can we gain this understanding? There are many sources that we use in our courses: speaking, printed materials, visual aids and sharing with each other, but the best way to gain understanding is from nature itself. So naturally, a large part of the course takes place outside, observing how nature works, how it reproduces, how it remains fertile and how it balances itself to support a wide variety of living things.

Another main point in Permaculture is to "observe, learn and share." Observe what is happening, learn from it and then share the information with others. These courses are much more than just teaching about Permaculture and nutrition, it is just as much about sharing knowledge within the group. We 'teachers' have been learning as much from these courses about the local environment, foods and farming practices as we have been teaching. A key group of teachers that often gets overlooked is our experienced local teachers, often labeled as 'indigenous knowledge.' It is this knowledge that has evolved over generations that the Permaculture Nutrition program seeks to learn about, try for ourselves and share. Courses are not the only way that we share what we have learned; we also share these ideas through conversations with neighbors, friends and colleagues. We've held sessions around our community in villages, at the agricultural research station, at the health centre, to expatriate groups and in the schools. We haven't counted the numbers of people that attended each and every session that we have given, but from the courses that we have registered, we taught 240 people, 156 of those females and 84 males. If we included all the people that have learned through other channels such as sessions, conversations and garden tours, that number would easily be doubled.

## **Teaching Through Training Manuals**

Another method we are working on now is the compilation of two manuals: one is a Training Manual and the other is a Field Guide of Local Foods in Malawi. The Training Manual is in the format of our training courses and is meant to give trainers the tools for giving their own

Permacultural Nutrition sessions. It is also geared toward people who want to implement Permaculture Nutrition in their lives. Whether or not someone uses the manual for training, the manual encourages everyone to share what they learn at whatever level they feel comfortable, such as with friends, family members, church groups, neighbors, etc. The Field Guide of Local Foods is still in its infancy, but the idea is to develop the Guide into a teaching tool for extension workers to identify and utilize local foods. We plan to include color photographs, line drawings, descriptions, scientific and local names, uses, seasonal availability and nutritional information. Along with this Field Guide, we are trying to integrate Permaculture Nutrition activities into the [National Herbarium and Botanical Gardens](#) so that more individuals have access to planting materials.

### **The Future of ePrmaculture Nutrition**

Although our Permaculture Nutrition program began in the [Ministry of Health](#) with the [US Peace Corps](#), the program is now also being integrated into food security projects with local donors such as the [European Union](#), [World Vision](#), [Project HOPE](#) and [Concern Universal](#). The project is spreading itself throughout Malawi by people that have experienced the potential the environment has for giving us health, and we believe this is the only true way for permanent improvements.

We are now putting more energy into providing trainers with teaching tools to make it easier for them to share Permaculture Nutrition with others. These teaching tools will also be applicable to other countries and similar programs are already taking place in South Africa, Zimbabwe, England, the United States and Australia, just to name a few. The uniqueness of our program in Malawi is the emphasis on local foods to provide nutrition, and this idea can also be transferred, but each country needs to identify and protect its own particular food resources. We hope that as others reconnect with the environment around them that they will collaborate with us in sharing the potential that nature has to provide us with nutrition and health if we respect it.

## 2001

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### **Food Rescue: A Safe Place at the Table**

*By: John Krakowski, MA, RD, CDN*

Federal nutrition programs and services provided by charitable food programs are essential for maintaining nutritional adequacy in the diet of hungry people. Food rescue, the capturing of safe food that would otherwise be wasted, provides an opportunity for a charitable food program to supplement the food resources in an emergency community food program. [City Harvest](#), founded in 1982, is the world's largest and oldest food rescue program. In 1995, City Harvest made a strategic decision to enhance their food safety program and sought to recruit a culinary professional (Certified Chef, Certified Culinary Educator, Certified Working Chef) to develop and implement this program. The decision to hire a culinary professional and establish a complete food safety program was based partly on the philanthropy work of the [Chef and Child Foundation of the American Culinary Federation](#). Chef and Child had created an integrated media tutorial on food safety in soup kitchens and established a nationwide network of culinary trainers to provide this training. Certainly, a dietetics professional could meet the requirements of this position, and I began my work as the Director of Food Operations in July of 1995.

Everyday, City Harvest delivers an average of 34,000 pounds of food that would otherwise go to waste — about 13.5 million pounds last year — to food pantries, soup kitchens, daycare and senior citizen centers, homeless shelters and charitable organizations serving low-income families and individuals in New York City. Our Hunger Hotline connects thousands of callers each month to emergency food in their neighborhoods. At City Harvest Operation Frontline classes (a partnership program with [Share Our Strength](#), a private national hunger relief organization), volunteer culinary, nutrition and finance professionals provide the basics in cooking, nutrition and personal finances to low-income New Yorkers.

There are more than 140 food rescue programs in the United States of America but food rescue efforts are located throughout the world in countries such as Argentina, Canada, Germany, India and Israel. Many program founders read, saw or heard about City Harvest in the international media and were inspired to start their own program. Other founders used City Harvest as a model and visited us to gather advice and information. The smart, simple solution of capturing wholesome, nutritious food and safely delivering it to emergency, community-based programs is "practical magic."

City Harvest delivers food to more than 700 emergency food programs. Products are donated from every part of the food system (farmers, manufacturers, distributors, restaurants, hotels, supermarkets, corporations, schools and healthcare institutions). Food donations are given to City Harvest for free, we give it to emergency food programs for free and in turn, the emergency food programs prepare meals or provide food packages for free. Many food donors are encouraged by the fact that there are national and state Good Samaritan Laws, which protect from liability those making "good faith" donations of food for the benefit of those in need.

Trained staff, refrigerated trucks and health department-inspected recipient agencies reassure food donors that food will receive proper handling.

The original plan for food safety training utilized the Understanding Prepared and Perishable Foods Integrated Media Tutorial. Program staff included drivers, driver assistants, agency relations and food development personnel. In addition, the Safety and Food Excellence (SAFE) program, developed by Colorado State University and Cornell University Cooperative Extension, supplemented the program by providing a curriculum outline for an on-going food safety training program.

City Harvest identified food safety as a core value in our strategic plan. The minimum requirements for all program staff, and our recipient agency network, now include the [ServSafe™](#) program of the National Restaurant Association, and integrates the Soup Up Food Safety curriculum developed by Cornell University Cooperative Extension. This requires two full days of training and completion of the national certification examination.

Food safety is an important concern for the hungry. City Harvest works harder than most to assure food safety because of our clientele. People with compromised immune systems like young children, the elderly, people with diseases such as cancer and HIV, pregnant and lactating women, and people who are poorly nourished, are at an increased risk for acquiring a food-borne illness. Many of the people who use soup kitchens, homeless shelters and the emergency food system have compromised immune systems.

The donation, collection and distribution process has been refined over the years. City Harvest picks up donated, usable excess food from 650 regularly scheduled donors every week, and distributes it to 458 member agencies encompassing more than 700 emergency food programs. Food donors are scheduled according to when they anticipate having food (morning, afternoon, evening or night) and how often they anticipate having food (every day of the week, once a week, three days a week, etc.)

Each day, thirteen refrigerated trucks travel regularly scheduled routes. City Harvest has sixteen routes in all, 10 in operation on weekdays, three during the evenings and three on weekends. The day routes are divided into morning and afternoon sections. Drivers pick up food from a certain number of regularly scheduled donors in the morning and then drop the food off at regularly scheduled emergency food programs. After lunch, drivers pick up from scheduled afternoon donors and drop food off at scheduled afternoon food programs. City Harvest does not store food. Food is picked up and delivered the same day.

We often receive call-in donations from food establishments, photo shoots, events or others with excess food. These donors usually call that day for a pickup, and sometimes prearrange a pickup. Call-ins known about prior to the day's start are added to the driver's route. The driver gets a copy of the call-in sheet with the name and address of the donor and other particulars (e.g., equipment needs, entrance details.) If a call comes in after the drivers are out on the road,

the dispatcher assigns the pickup to the driver nearest to the donor's location. Drivers communicate by using a two-way radio.

"Freights" and "specials" are well received by recipient agencies. Freight donations provide large quantities of individual food items. Nutrient-dense donations of fresh produce are typical freight examples and feedback indicates more than half of the recipient network desires fresh produce. Special one-time donations often require expert food safety planning. The most challenging donation to date was the "World's Largest Meat Pie" prepared in a special oven in Bryant Square Park. The required safe food handling process was conducted in witness of the City of New York Department of Health and resulted in the successful rescue of more than six tons of potpie filling.

A food development team sources food from the entire food system. City Harvest arranges for food donations in a variety of ways. First is word of mouth, a current food donor tells someone else about City Harvest who then calls us when they have extra food. We also solicit new food donors by targeting certain groups like meat wholesalers, top-notch restaurants, bakeries and hotels, and send them a food donor kit. We follow up with a phone call.

City Harvest also advertises its service by getting free ad space in trade publications that will be seen by food merchants of various types. We put fundraising ads in *The New York Times* every November and December, which often result in food donations, as well as financial contributions.

The most common reason people donate food is that they hate to waste food and they want to feed hungry people. Many New Yorkers are aware of hunger and homelessness; they see it every day when they leave their homes. More and more are leery about giving money to those who panhandle for fear the money will be used for drugs or alcohol. Donors are concerned that people are not eating so it is far more appealing to them to give food to both the homeless and the hungry (which includes many non-homeless families, children, senior citizens). Giving through City Harvest is the easiest and most effective way to provide food for the hungry.

A wise person learns from their mistakes and an even wiser person learns from the mistakes of others! The following are the first steps toward starting a food rescue program in any community.

- A. Assess the community's need for program:
  - o Are there hungry people? Who are they? Where do they live?
  - o Are there established programs that feed the hungry, like soup kitchens, homeless shelters, and senior citizen centers? Where are they? Do they have enough food? Can they use extra food, especially if it's already prepared or not in top condition (like stale bread)?
  - o Is there much food wasted? By whom or what kind of food establishments?
  - o Does your community have any laws that will protect food donors from liability if donated food makes someone ill?

- Is anyone else doing this, or something like it? Do they want help? If not, are they doing it well? Can you compete for support and funds? Should you even try, or will it polarize your community?
- B. Identify support for starting such a program:
- Are there people willing to volunteer to pick up food and deliver it to where it's needed?
  - Is anyone willing to take on the tasks of identifying potential food donors, handling telephone calls and arranging the schedules for pickup and delivery of food donations? Does anyone in your community have experience with transportation that they'd be willing to share?
  - Are any restaurants, food wholesalers, supermarkets or other food establishments willing to sign on at the beginning? Are they willing to let you use their name to try to bring in other food donors?
  - Do you have a local health department or authority willing to work with you to set up safe food handling practices?
  - Are there any people with money who would like to help start this by contributing to defray costs of telephone, postage, supplies and other essential items?
  - Do you need support from government authorities? Are they willing to provide financial as well as political support?
- C. Make a plan for starting the program:
- What do you want to call your program? Does any other group in the country have that name?
  - What geographic area will you serve? Can that expand over time, or will it be limited? Decide how much food you can handle the first six months, first year, second year, etc.
  - How fast do you want to grow? Where would you like to be in five years?
  - Do you want to incorporate or not? Do you want to have non-profit status? Is there a volunteer lawyer in your community willing to help you do this work?
  - Do you want to be an all-volunteer program, have a small staff with mostly volunteers, or have an entirely paid staff? How will you develop along those lines? How will you train volunteers and/or staff? How will you raise funds? Who will run the operations, do the fundraising and perform other tasks?
  - How do you want to run the organization? Do you want a small governing board, an advisory council, an administrator or some combination of these?
  - How will you make sure the community supports this program? In what ways can the community get involved?
  - How will you keep food donors involved and feel "program ownership?"
  - How can you raise funds to support the program? Are there any prominent people in the community who will sign on as advisors or governing board members who will take most responsibility for raising money?
  - Is anyone in your community willing to provide you with free advertising space and advertising designs?

- Share your written answers with supporters for their comments and suggestions, and to form the basis for any fundraising appeals.

Emergency Food Programs are community nutrition programs. They react to hunger with speed, compassion and minimal paperwork. Dietetics professionals provide a unique skill set for working and volunteering in food rescue programs. As food rescue extends the normal food chain, deliberate efforts to capture safe, nutritious food will allow a safe place at the table.

For further information see Web site [www.cityharvest.org](http://www.cityharvest.org) or e-mail [jkrakowski@cityharvest.org](mailto:jkrakowski@cityharvest.org).

**2002**

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## **Baby Weighings and Village Folklore Groups**

*By: Christine Lindell Detweiler, MPH, RD*

What do monthly baby weighings, conveying health messages via village folklore groups and promoting treated mosquito nets have in common? These and other activities are part of an integrated health program happening in a rural province of Benin, a small country in sub-Saharan Africa. In an area of the world where a child dies from malaria every 30 seconds, where significant numbers of children are often chronically undernourished or even malnourished and where infant mortality is around 150 per 1,000 live births, improving nutritional well-being is not just a matter of nutrition.

The non-governmental organization (NGO) that I have been working with for the past six years seeks to promote health and improve nutritional status of children, as well as adults, in a rural setting where most children's parents are subsistence farmers. The NGO has two primary actions: giving small loans to women for income-generating activities and promoting community health activities in villages. The name of the organization is the Association of Evangelical Churches for Social Promotion, a Christian NGO that was established 10 years ago in an attempt to address some of the community development needs in the Dassa region of Benin.

The health program works at health and nutrition in a number of different ways. The principal goal is to encourage villagers to take ownership in their own health, to realize that health and well-being is ultimately their own responsibility and to equip them to work together to improve their health. To equip people in this way, we use a series of participatory teachings where villagers are gathered together and a particular topic related to health is discussed. The methodology uses flannelgraph pictures and a logical sequence of questions to encourage people to reflect on their own situation (to see themselves in the pictures and to find in themselves the answers to the questions). Once people understand a particular health problem and the origins of the problem, as a community they can decide to do something concrete to resolve the problem. A specific example of this is a series of animations talking about hygiene and the environment and leading up to the question "where do illnesses come from?" This has led to villages deciding to build latrines (where none have existed in the past), to build a village dump or to have monthly village clean-up days. With malaria having such a detrimental health impact on children, often contributing to weight loss and poor nutritional status, a recent initiative has focused specifically on malaria prevention. Along with working at decreasing malaria larvae breeding grounds, a key focus is promoting the use of treated mosquito nets at night for all children. Young children are particularly susceptible to malaria.

Another part of the health program's activities is setting up and supervising village health posts. Community health workers are chosen by their village and are given training to treat basic illnesses, such as malaria and diarrhea, and give basic first aid. They also receive training to do prenatal and postnatal care, as well as delivering babies. The village health workers are given

specific training related to nutrition and are involved in the monthly baby weighings that take place in their villages. One of my principal responsibilities is in helping to plan and facilitate any trainings that we organize for the village health workers. Our goal is to conduct three continuing education trainings per year.

A third aspect is using village folklore groups, groups who traditionally are present whenever an important event takes place in the village, as in a death, a wedding or a religious ceremony. The folklore group is there to sing and dance and encourage people. We have given these folklore groups training in preparing and giving health messages so that they can then convey the health messages in their own setting. Being groups who already have a highly-respected role in their community, people will listen to what they have to say. Twice a year we organize a competition between the folklore groups from the different villages we work in and they are given specific health messages to prepare. Each group is given 10 minutes to present their message before a jury and during this time a local radio station records the message they are promoting so that the message can be diffused to a much larger audience later.

The fourth aspect relates to specific nutritional intervention. The principal goals of any nutritional surveillance (NS) program is to prevent severe malnutrition by early detection of the slowing or decrease of a child's growth rate and the taking of responsive measure in the case of growth failure. In this setting, we have found it imperative that the nutritional surveillance program, though having its own specific objectives, be associated with the other aspects of an integrated health program. We have found that a child's nutritional status is affected by so many different factors that nutritional surveillance on its own will not address all those factors. The NS activities (growth monitoring and nutritional rehabilitation) encourage an active participation on the part of the child's parents. And we try to capitalize on the interest expressed by mothers, in particular, in encouraging their participation in the other health related activities.

Weight for age is one of the preferred measures for nutritional surveillance programs that do monthly growth monitoring. In employing this indicator, we use the standard Gomez-type growth curve, which is printed on a separate card for each child. The curve can indicate the degree of malnutrition (severe <60 percent, moderate 61-75%, light 76-90% of the standard), but even more important is the direction of the growth curve in a consistently upward fashion.<sup>1</sup>

The nutritional surveillance (NS) program comprises two principal activities: growth monitoring and nutritional rehabilitation at home. The objectives of the growth monitoring are to detect growth failure, as well as cases of malnutrition, by the monthly weighing of children. Actions then are taken to correct poor nutritional status. These actions include health/nutrition education, nutritional rehabilitation of children at home and encouraging mothers. The objective of the nutritional rehabilitation is to recuperate children in their own homes by demonstrating and encouraging an appropriate diet for children using locally accessible food items. When necessary, appropriate medicines are also prescribed in conjunction with the nutritional rehabilitation therapy, as in cases of malaria, worm infestation and other minor illnesses.

The target group for the NS program is children ages zero to three years. Currently the organization is conducting its health activities in four villages.

Each participating village was asked to select three community health nutritionists (CHN) who then were given an initial one-week training, which I helped to plan and facilitate. The training focused on the basic food groups, in this setting food is divided into energy foods, building foods and protection foods. The CHN were given instruction on how to combine local foods to have complete protein as well how to assure a balanced diet. The training included how to conduct baby weighings, plotting weight on the growth charts, as well as interpreting the growth charts. Participants were taught how to identify different types of malnutrition and how to try and identify children at risk. The training also discussed ways to talk with mothers about their children's growth, particularly if the child experiences growth failure. Finally, the CHNs were given training in how to conduct cooking demonstrations and nutritional rehabilitation therapy. Specific protocols were developed for the NS program for the CHN to follow. The protocols were established using guidelines developed by [Oxfam Québec](#), an international NGO working in Benin at the same time. After the initial theoretical training, we arranged an exchange visit for the CHNs to the nearest town where there is a Center for Nutritional Rehabilitation. This center, 50 miles from our locality, would be the referral center for severe cases of malnutrition which exceed the competencies of the CHNs. The CHNs were able to see different types and stages of malnutrition, as well as visit the step-down facility to learn more about nutritional rehabilitation after treatment of severe malnutrition. My principle role in the nutritional surveillance activities has been in developing the program/protocols, facilitating the training of the CHNs and ongoing support as a technical advisor to the supervisor of the program.

The following protocols were established for the different activities:

- Growth Monitoring

The baby weighing is conducted monthly on a fixed day each month.

Steps to follow:

1. Registration of the child (includes looking at the growth chart for vaccinations).
  2. Examination of the child for any illness.
  3. Weighing of the child.
  4. Notation of the weight on the growth chart.
  5. Discussion of the results with each mother individually (includes interpreting the curve and specific counsel as necessary).
  6. Asking mother to stay until the end of the weighing if her child needs nutritional rehabilitation.
  7. Conducting a health education session with all the mothers present.
- Nutritional Rehabilitation (NR) in the Home

A child is enrolled in the NR program if he/she has not gained weight for two consecutive weighings or if the child's weight is <60% weight/age.

The frequency of the NR sessions is two times a month, the first one a week after the baby weighing, the second one a week before the next baby weighing if the weight/age >60%. If the weight/age is <60%, the NR sessions are held weekly with the mother.

A child is referred to a Center for Nutritional Rehabilitation or a Pediatric Hospital if he/she does not gain weight during four sessions of NR, he/she has had a significant weight loss since the last weighing, if the weight/age falls into the <60% or if he/she has illnesses that the community health worker is not able to treat.

A child is finished with the NR program when he/she has gained weight during three consecutive weighings.

For children whose weight/age fall between the 60% and 100% who have not gained weight for two consecutive baby weighings:

Steps to follow at the baby weighing

1. Mothers are kept until the end of the weighing.
2. The date of the NR is set together.
3. A recipe is chosen for the cooking demonstration.
4. Ingredients and materials necessary for the NR are divided amongst the mothers.

Steps to follow during the NR

5. Each child is weighed and its weight is noted on its growth chart.
6. Hygiene is emphasized — particularly hand washing before food preparation and eating.
7. Mothers help in the food preparation.
8. A portion of the food prepared is distributed to each child and CHNs observe how well each child eats.
9. CHNs discuss individually with mother to help her come up with ideas on what to prepare for the child during the week.
10. Health education session is given focusing on some nutrition issue.
11. Date for the next NR is set, recipe is chosen, ingredients divided up.
12. Follow-up notebook is filled out.

For children whose weight falls below 60 percent weight/age the date for the NR is decided with the mother before she leaves the weighing and the CHN goes to the individual's home. A recipe is decided upon to prepare depending on what the mother has available. Frequency of follow-up depends on the following:

13. Daily — anorexia, edema present, complicating factors such as anemia or diarrhea.
14. Twice weekly — appetite returns, complicating factors resolved/resolving.
15. Weekly — weight gain.

Steps to follow:

16. At the first visit, the father should be present so that the CHN can discuss with him the importance of improving his child's nutritional status.
17. Ask mother about child's health status and weigh the child. Record weight on the growth chart.
18. Prepare the meal asking the mother to help as much as possible.
19. Offer the food to the child and watch him/her eat.
20. Discuss with the mother what problems she encounters and encourage the mother.
21. Set the date for the next session and choose the recipe to prepare. Ask the father to help buy certain ingredients.
22. Follow-up notebook is filled out.

If it is necessary to refer the child to a Center for Nutritional Rehabilitation, when the child returns home the CHN continues to make home visits to that child for weekly weighings initially and to be followed closely by the CHN for three to nine months, depending on the severity of the malnutrition to prevent relapse. Once the child has experienced weight gain for three consecutive months, he/she can join the group rehabilitation.

The NS program is dependant on mothers participating in the monthly weighings. Attendance at baby weighings often depends on the time of the year, with attendance decreasing during cultivation season as mothers are more likely to be out in their fields. CHNs also depend on the support that the community health workers add to the team effort as they help in promoting, as well as carrying out, the baby weighing each month. A difficulty we encounter is that some of the CHNs are not literate which means they can weigh the babies but cannot plot the babies' growth on the chart. However, by using the growth charts developed by WHO which have different colors for the different percentiles as well as using the protocols developed for looking at weight that does not increase; even illiterate CHNs are able to interpret the curves once the weight is correctly plotted./p>

This type of nutritional surveillance program is fairly typical in regards to the protocols established for the growth monitoring and nutritional rehabilitation. As indicated above, we used guidelines already developed by Oxfam Québec. The protocols have worked well for the CHNs, however, one of the major problems encountered is that mothers are often not given feedback immediately on the curve. Most mothers want to weigh their babies, but often do not recognize that the purpose of the monthly weighing is to follow their child's growth. The connection between the activity of weighing and the plotting on the chart and how that impacts the child is not emphasized enough. This is why some of the other activities that our health

program is carrying out in the same communities are important. As people are empowered to take responsibility for their own health issues/problems they then become more participative in the prevention of those health problems. The nutritional surveillance program cannot stand on its own apart from the other health and development activities, which help to complement the progress made in children's nutritional well-being.

This brings us back to the initial question of how baby weighings, village folklore groups and treated mosquito nets can be linked, each of them are vital ways to mobilize communities in rural Benin to improve the health and nutritional well-being of their children. This approach of integrated health care to improve nutritional status of children is a model that can be reproduced in other developing world settings. In countries where malnutrition is a common reality, the approach used to combat the malnutrition must be multi-faceted. We have found that using a variety of methods to target the same problem has been shown to have more success than just focusing on one particular activity.

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**2003**

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## **What are the Typical Dietary Patterns in Aleppo, Syria? A Collaboration**

*By: Mary Cocke Read, RD, LDN*

Proper nutrition plays a very important role in achieving and maintaining optimal health. The field of nutritional epidemiology, which focuses on elucidation of the relationships between nutrition, health, and disease in populations, has been highly influential in improving diet and reducing the incidence of some chronic diseases in the United States and other developed nations. In contrast, the burden of many chronic diseases such as cardiovascular disease, diabetes and hypertension is increasing in many developing nations, especially as urbanization and westernization increases.<sup>1</sup> Unfortunately, little research exists on how diet affects health in developing countries.

The aims of my proposed research are: first, to review the current nutritional epidemiological picture in Syria, specifically, to address what is known about diet and disease and what has already been studied; the second aim is to review the established methods used for collecting nutrition data in the United States and to discuss what nutrition tool may be most appropriate for use in nutrition research in Syria; the third aim is to describe an innovative international team approach for this research project; the fourth and final aim is to discuss areas for future nutrition study in Syria.

Developing nations in the Eastern Mediterranean region appear to be at risk for several diet-related diseases. Syria has a total population of 16,609,000. Life expectancy at birth for Syria is substantially lower than in more developed countries (68.7 and 74.3 for males in Syria and the US, respectively; and 72 and 79.5 for females in Syria and the US, respectively). Child mortality in Syria is 27 male deaths and 23 female deaths per 1000, which ranks 10th out of 17 Eastern Mediterranean countries.<sup>2</sup> The leading cause of death in Syria is cardiovascular disease. Although mortality data are limited in this region, reliable data from several Eastern Mediterranean countries revealed that 18% to 40% of total deaths are caused by cardiovascular disease.<sup>1</sup> Other diet-related diseases common to Syria include growth retardation among young children and iron deficiency anemia.<sup>(3)</sup> Chronic diseases related to diet such as obesity, diabetes, hypertension and some types of cancer also have become emerging health problems in Syria.<sup>4</sup>

Patterns of food consumption play an important part in the incidence of many of these diseases. Demographic, socio-economic and health conditions have changed in Syria over the past four decades,<sup>1</sup> and these changes have altered dietary habits and lifestyles. The traditional Eastern Mediterranean diet, characterized by foods high in fiber and low in fat, cholesterol and sodium is changing to a more westernized diet, especially among those with middle and high incomes.<sup>5</sup> These dietary changes, along with inadequate physical activity and increases in obesity, diabetes, hypertension and tobacco use, are all partially responsible for the increasing incidence of cardiovascular disease and are contributing factors to the emerging chronic diseases.<sup>4</sup>

Incidence of diet-related chronic diseases in Syria also is increasing as life expectancy increases.<sup>6</sup> Although life expectancy in Syria is lower than in many developed countries, it has increased by approximately 15 years since 1970,<sup>2</sup> likely due in part to improvement in health services and standards of living. Given the chronic nature of many dietary influences on health, increased life expectancy will provide more opportunity for the incidence of lifestyle diseases, such as diabetes, obesity and hypertension to increase.

There is extensive documentation on the association between certain dietary components and many of the chronic diseases occurring in Syria. Excessive dietary fat has been linked to increased risk of obesity, coronary heart disease and certain cancers. Increased intake of fiber has been shown to reduce blood cholesterol levels and the risk of certain cancers.<sup>7</sup> Excess energy intake is directly related to obesity, diabetes, high cholesterol, high blood pressure and coronary heart disease.

Looking at the nuances of the Syrian diet is the first step in establishing appropriate national dietary guidelines and beginning nutrition therapy at the individual level. Data on Syrian food intake patterns are scarce and limited to information on per capita consumption. Currently, the only available dietary data for Syria comes from food balance sheets collected by the [Food and Agriculture Organization \(FAO\)](#). These reports take the food available for consumption and divide it by the total population in order to determine trends in daily per capita dietary energy and fat supplies over set periods of time. Although the accuracy of the food balance sheets depends on reliable reports on agriculture, trade and population, they provide an approximate picture of the overall food trends in a country. These reports show that there was an increase of 43% and 50.1% in per capita energy and fat supplies, respectively, in Syria during the period from 1971 to 1997.<sup>8</sup>

Understanding these food patterns is an important factor in implementing established dietary guidelines for the prevention and reduction of diet-related chronic diseases. While population-level consumption data are useful, it is important to collect individual-level dietary data. Information on food consumption patterns collected from the people who are purchasing and eating the food are essential because it provides a more fine-grained analysis of specific macro- and micro-nutrient intake patterns, and elucidates important sub-group differences in these patterns (e.g., children versus adolescents, males versus females, urban versus rural residents, Muslims versus non-Muslims). These sources of basic nutrition data are not currently available for Syria, however.

An essential first step in addressing this problem is to develop techniques to reliably and validly assess diet in Syria. There are several methods for collecting nutrition data commonly used in the United States, the most popular of which are 24-hour dietary recalls, food frequency questionnaires (FFQs) and diet records (DRs). In 24-hour dietary recalls, the individual attempts to remember all of the foods and beverages consumed in the preceding day. This recall is administered by a trained interviewer in computer or paper-and-pencil format. The interviewer then probes for details. The advantages to this procedure are that it is quick to complete (about 20 minutes), utilizes a short recall period (24 hours) and it is interviewer-administered, which

reduces the need of literacy by the respondent. Limitations to this technique are that memory may not be entirely accurate, the interview situation may reduce accuracy in reporting due to social desirability and the data collected only represent one day, which may not accurately reflect usual intake.<sup>9</sup>

The FFQ attempts to assess usual dietary intake, by collecting intake data over an extended time period, typically the past year. This method requires the individual to report what foods and beverages were consumed based on a comprehensive list of foods. One of the strengths to this method is that there is a long reporting period, which makes variability across daily intake easier to assess. This method is inexpensive and requires little work for the respondent. The primary drawback to this questionnaire is that reliance on memory is substantial and can be a burden for many populations. Either overestimation or underestimation of usual intake can occur as a result.<sup>9</sup>

Diet records require individuals to record everything they eat or drink in diary format over a period of days. The individual records how each food was prepared, the serving size, and the specific details such as the name brand of each item. In most cases, the individual is trained by a dietitian on recording intake with sufficient detail. At the end of the recording period, an interviewer reviews the records and asks for clarification if needed. This method is considered the "gold standard" for self-reported dietary assessment because the individual is recording actual consumption during the recording period and not relying on memory to recall past intake. This technique is burdensome, however, and may result in incomplete records. This method also requires extensive coding of foods that then must be entered into dietary assessment software.<sup>9</sup>

While the benefits of these three dietary methods are apparent, several factors such as expense, efficiency and validity are important to consider in determining what is the most feasible method to use. For these reasons the DR and 24-hour recalls may not be the most appropriate choice, especially when diet is only one of several types of information collected during a health assessment or research study. FFQs are the least expensive and most efficient of these three methods. The typical FFQ survey requires pen and paper and a brief amount of time to complete. Translation and coding time also will be minimal because the survey only requires the participant to report the frequency of consumption and portion sizes of foods.

Validation of FFQs is often done by comparing the FFQ data to more detailed methods of dietary assessment, most commonly DRs. Results of validity studies of FFQs have varied from zero<sup>10</sup> to 0.94.<sup>11</sup> This is often due to the size and scope of the study. Many validity studies are small and the time frames being studied have varied considerably (one week to one year). Overall, however, FFQs have been shown to estimate total energy intake, as well as intake of several macro- and micro-nutrients, with good accuracy.<sup>12</sup>

Most dietary assessment methods have been designed for, and tested on, American, white adults. Because of this, some cultural assessment will be necessary in order to begin to develop an appropriate FFQ. Although Syria is somewhat westernized, illiteracy remains a problem<sup>13</sup> and

limits the usefulness of self-administered surveys. Alternative methods to self-administered surveys may be preferred, such as providing photos of foods rather than written descriptions, and using an interviewer rather than self-administered format may be beneficial. Such approaches to FFQ administration have been used effectively.<sup>14</sup>

While this method has great potential to understand diet/disease relationships in developing countries such as Syria, a good deal of formative work is needed to develop a culturally-appropriate FFQ for this setting. In addition to the cultural translation issues discussed above, it is essential to begin the development process by collecting data on usual foods consumed in the Syrian diet. Specifically, FFQs are developed based on knowledge of usual foods consumed in a given population. For example, widely used FFQs in the US such as the Block(15) and Willett FFQs<sup>16</sup> were developed based on key informant interviews with dietitians- and population-based data on daily dietary patterns.

Qualitative data collection techniques, including participant observation, informant interviews and focus groups, are useful tools<sup>17</sup> in epidemiological research to guide instrument development. These methods are particularly useful for formative data collection on health issues in developing countries where lack of adequate scientific infrastructure often contributes to a poor foundation in understanding the relationships between health behaviors and outcomes. In terms of dietary assessment in developing countries, qualitative methodologies can provide rich data by allowing researchers to interact extensively with people in their natural settings, fostering understanding of the contextual factors, which determine nutritional status.

An important step in developing a culturally appropriate FFQ for Syria is to collect data on common foods, preparation methods and eating patterns, in order to create a comprehensive food list. We will adopt a multi-model approach to accomplish this task, using established qualitative data collection techniques. We will begin with key informant interviews to gain an overview of common foods, usual consumption patterns and relevant sub-groups with potentially different dietary patterns (e.g., urban versus rural, Muslim versus Christian, professional versus working class, men versus women). Approximately 20 key informants will be interviewed who are knowledgeable about Syrian dietary patterns, including primary care physicians, grocery store owners, restaurant owners and other people in the food industry.

Next, we plan to conduct a series of focus groups with Syrian men and women, 18 to 59 years of age, to obtain more detailed information on dietary patterns. Focus groups are a useful data collection tool because they take advantage of group dynamics and use an informal setting to obtain information about norms, behaviors and attitudes.<sup>18,19</sup> We anticipate that focus groups will be conducted separately for specific subgroups with potentially different dietary patterns. Data obtained from key informant interviews will be used to develop focus group questions and probes. The conduct of the groups, as well as data analysis, will be performed using established methods that have been used extensively by our research team.<sup>18,19</sup>

The above qualitative data will be used to create a comprehensive food list. From this list, a FFQ will be developed that is culturally appropriate and provides a comprehensive and accurate

assessment of the usual Syrian diet. This will include a place to write in additional foods not covered by the list. The FFQ will be administered to 20 (10 men and 10 women) adults, age 18 to 59, and assessed for appropriateness of administration format, time taken to administer and any missing foods.

Further research will depend on time constraints. I have the opportunity to travel to Syria and conduct research for one month during the 2003 to year. The research trip is part of an NIH-funded grant to conduct tobacco control research in Syria. My project would provide a unique opportunity to gather nutritional data apart from the funded project with the possibility of enhancing the smoking study.

Two [University of Memphis](#) faculty members, Dr. Linda Clemens, Director, Clinical Nutrition Internship and Dr. Kenneth Ward, Assistant Professor and Principle Investigator on the NIH-funded international grant to conduct tobacco control research in Syria both have offered to provide consultation on this project. Dr. Ward will be in Aleppo, Syria along with me and, therefore, will be able to provide first hand support.

This research will be conducted at the [Syrian Center for Tobacco Studies](#), where three of my Syrian colleagues, Wasim Maziak MD, PhD, Taghrid Asfar MD and Fadi Hammal MD, will be conducting research and have offered to assist me in translating the survey to Arabic and helping with recruiting participants, and gathering and translating data. They have all three visited our department at the University of Memphis and are currently working on the NIH-funded international grant to conduct tobacco control research in Syria.

Looking ahead, there are many areas in which this project may lead. Validation of the FFQ will be an important next step. This will be done by comparing FFQ results with those obtained by diet record. If further funding becomes available this may involve gathering 24-hour recalls that are interview administered, test-retest of the FFQ and comparing the interviewer-administered FFQ to a picture-sort FFQ.

Further applications for the FFQ involve using it in epidemiological studies in Syria. Determining the individual macro-nutrients such as fat, fiber, protein and carbohydrates is a critical part of examining hypotheses about diet and disease at the nutrient level. Nutrient data available from the US Department of Agriculture is used to analyze FFQs in the US.<sup>16</sup> This type of nutrient data is only available for Syria in limited form from a food composition database assembled by the FAO of the UN. Efforts are slowly being made to update and add to the completeness of this database.<sup>20</sup> Data collected in this study could be very useful to assist in such efforts. The Syrian Ministry of Health in Syria is a partner in the parent NIH grant that will sponsor my project. This partnership will facilitate working with appropriate national health officials to develop a comprehensive national nutrient database and furthering understanding of diet/health relationships in this country. Data collected in my project also are directly relevant to the parent project, which is seeking to develop culturally appropriate smoking cessation interventions in Syria. Dietary changes and weight gain commonly occur after smoking cessation in developed

nations and are associated with relapse.<sup>21</sup> Elucidating these relationships in Syrian smokers may prove very helpful in developing effective cessation interventions.

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2004

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## **Partnerships in Action: Medical-Nutrition Synergism for Clinical Nutrition/Dietetic Practice and Nutrition Education in the Indian Subcontinent Introduction**

*By: Varsha, PhD, RD*

This essay is an attempt to account decisive events/anecdotes that have impacted, shaped the career of the applicant spanning 22 years (1982 to 2004). It summarizes how effective tackling of the varied demands of nutritional interventions that she confronted, be it at clinical, community or commercial level, during this period has stood her in good stead to direct, guide and impact development of practices in India. Also recounted herein is the building up of confidence and experience that is being reflected as a positive influence on the development of sound practice in the neighboring country Sri Lanka, a part of the Indian Subcontinent and yet distinctly diverse.

### **Background**

In India, the terms *dietetics* and *dietitian* have been domesticated since the career in dietetics began with the introduction of graduate programs in home sciences. To add to its greater degree of domesticity was the fact that the study of home science was purely a female prerogative. The baccalaureate degree in home science was encouraged because the family felt that the girl was educated without her domesticity being adversely affected, especially in the marriage market. The enterprising among the graduates of home science decided to convert their academic qualification into a specialization in the allied-health specialist category, and thus the profession of dietitian was generated. Their ambit of interaction, however, was limited to the hospital kitchen, thus retaining the domestic character of the dietitian. This identification is best described by the following phrases: glorified cook, a sedentary clerk, calculating and maintaining calories and the weight of the food or nutrient; and maintaining and formulating unappetizing recipes for the helpless, hapless patient.

This myth needed to be exploded. Therefore, to convert nutrition from sheer art of feeding the body at all stages of life to the science that feeds the body in health and disease, in the 1980s, a branch of study was segregated and specifically designated as "Nutrition and Dietetics." But the progression was arrested because the centers offering this training were the home science colleges that were exclusively for women and they had no access to hospitals or medical universities to back their teaching and learning programs.

Although nursing and nutrition are derived from the same root word *nutricus*, nutrition has not received the exalted status that nursing has in the medical scenario. Despite the added glamour and dietitians calling themselves clinical nutritionists, the work environment did not undergo any change whatsoever.

The nutrition world was changing at a pace much faster than the situation at the home front, and the access to the academic knowledge was limited. This curtailed the advancement of the

dietitian in becoming a true and strong link between the community and the clinical and commercial aspects of nutrition. It has been realized that the clinical nutritionist is a vital link between the physician and the patient. The clinical nutritionists or dietitians had understood that they were required to maintain data relevant to the anergic metabolic profile, play a very scientifically dynamic role at the bedside of the patient and be an active member of the team treating the patient. However, the lack of exposure to the hospital-based patient environment inspired no confidence in effecting the change.

The urgent need to promote medical nutrition synergism for effective patient management and dietetic practice increasingly perceived as medical schools and practitioners have moved away from nutrition/diet prescriptions. HM Sinclair declares, "Medicine arose from dietetics and Pythagoreans including Hippocrates used diet as the main line of therapy and drugs only when diet failed." Despite the applicant having established a stronghold in the private medical university the resistance to referring patient to the nutrition support team/practitioner is still the order of the day even in her setup. Theoretical prescriptions still rule the roost and without medical-nutrition synergism, evidence-based practice in nutrition will forever remain a distant illusive dream.

### **Personal Awareness**

The applicant's foray into developing "THE MEDICAL - NUTRITION SYNERGISM" was influenced by a statement of her department HOD, at [MS University of Baroda](#), when completing her master's degree, "Doctors and dietitians shall make perfect marriage partners for the initiation, sustenance and growth of dietetic practice in India." A prophetic statement indeed as the applicant's marriage to a doctor sealed the future path and the journey thus began. This established link was further strengthened by acquisition of the interdisciplinary [doctorate] degree in Foods and Nutrition-Medicine, Faculty of Science, [University of Madras](#), through the Asia's oldest Medical Institution, [Madras Medical College](#), in 1989. The [doctorate] dissertation was highly commended by Prof. J.M. Tanner, [Institute of Child Health](#), London UK.

### **Partnerships in Action — Indian Context**

The **Clinical Nutrition Practice Partnership** — the applicant was initiated into this partnership under the tutelage of medical-school teacher, Dr. Dante Mathuranayagam, Hon. Physician to President of India, Dr. V.V. Giri at Madras Medical College, in 1982. Certificate course in Clinical Nutrition at [Leeds University](#), UK and training under Dr. Mitch Kaminski, Jr. at Chicago in 1989 gives credence to the applicant's claim for forging such a partnership.

This partnership bloomed into a success story when in 1992, for the first time, a private medical university accorded recognition to the lacuna and supported the applicant's efforts to correct it. Not only was this an act of acknowledging the need for a clinical nutritionist to be identified as a trained professional in the area of nutrition, it was also an exercise in defining the role. The nutrition professional was the one who focuses on diet therapy, incorporating normal and modified prescription, planning and instructing while encouraging individualized dietary

compliance in both health and disease the medical university established the Department of Nutrition and Dietetics. Re-christened as Department of Clinical Nutrition, 1995, a job specification was delineated on the premise that the knowledge of clinical nutrition must be used to:

1. Help assess the severity of malnutrition.
2. Plan optimal nutritional therapeutic programs.
3. Assess the balance of macronutrients.
4. Monitor the progress of intensive nutritional support.

In addition, the Department of Clinical Nutrition, placed under College of Allied Health Sciences of this private medical university, initiated and implemented a one-year postgraduate diploma course in clinical nutrition that gives practical bedside training. Its course content has been inspired by certified nutrition support dietitian syllabus of [American Society of Parenteral and Enteral Nutrition \(ASPEN\)](#).

In 1997, the applicant was encouraged by the vice-chancellor of the medical university to compile a publication as guide for physicians to promote medical nutrition therapy. Released by Dr. Philomina Reddy, former vice-chancellor of [Women's University \(Tirupati\)](#), the publication received overwhelming response through media marketing and was well received by public, too, though compiled for physicians!

The applicant further expanded the horizon by establishing links with the Nutritional Science Education and Research Foundation (NSERF, Syracuse, N.Y., United States) and created the first regional training center in nutrition support systems. This collaboration conducted two training programs in 1999 and 2000 for hospital teams consisting of physicians, clinical nutritionists, nurses and pharmacists.

Since, October 2002 and till date, the applicant is engaged in blazoning new practice path in pediatric nutrition. Her pioneering effort in establishing Pediatric Clinical Nutrition Support Service at a major private 200 bed pediatric hospital in Chennai is one amongst the very many firsts in her career.

April 2004, marks the crowning moment of this partnership endeavors with the invitation to the applicant by Dr. C. Gopalan (father of nutrition in India and presently Founder, [Nutrition Foundation of India](#)), to present "Nutrition In The Medical Curriculum: A Nutritionist Perspective," A Nutrition Foundation of India workshop, in collaboration with [Indian Council of Medical Research](#), [Medical Council of India](#), [National Academy of Medical Sciences](#) and [Directorate General of Health Services](#).

The applicant, an exception amidst a bevy of medical professionals and academic stalwarts, past and present, in the field of medicine, drawn from the prestigious institutions listed above is a culmination of a decade-long relentless and sincere effort to socially market nutrition services to medical fraternity. An exercise ably aided by the applicant being academically positioned in a

private medical university (Associate Professor and Head, Department of Clinical Nutrition, [Sri Ramachandra Medical College and Research Institute, Deemed University](#)). Invitations as faculty/guest speaker propounding medical nutrition therapy as mainstay of patient-care has been a routine exercise for over the years at most of the local/regional/national congress/conferences/workshops/seminars of the various specialties of medicine/surgery.

The applicant's practice has not only come of age and matured with respect to medical fraternity recognition, but it has fructified on the nutritional fraternity front, too. The testimony of this has been the applicant being internationally supported/recipient of a listed few below:

1. British Council Scholarship for Leeds University Course in Clinical Nutrition; Leeds, United Kingdom; 1989.
2. Cilag Scholarship for 6th International Congress in Nutrition and Metabolism in Renal Disease; Harrogate, United Kingdom; 1991. Presented paper [en]titled "Risk of mortality associated with commonly measured variables indicative of malnutrition in hemodialysis (HD) patients (Pts)."
3. Prof. Oreopaulis Best Paper Certificate and Cash Award for paper [en]titled "Nutrition Support in CAPD: Principles vs. Practice" and received at the First Conference of Peritoneal Dialysis Society of India; Bangalore; 1997.
4. Scholarship recipient, 9th International Congress in Nutrition and Metabolism in Renal Disease; Vienna, Austria; 1998. "Nutritional practices for Indian ESRD patients" and "Energy metabolism in renal transplant patients — the Indian Experience."
5. Social Marketing Concept in Nutrition Education, financially supported as invited Indian faculty, 3rd Asian Congress of Dietetics; Kuala Lumpur, Malaysia; 2002.
6. Indian Representative on the International Confederation of Dietetic Associations; contributed actively at the Delegate Workshops at Edinburgh, Scotland (2000) and Chicago, [IL] United States (2004).
7. Privileged and honored to be invited at the interaction "Indian Perspective of Nutritional Management in Pre-Renal Non-Dialysis Status — Application of Guidelines for Chronic Renal Disease in the Care of a Patient in the Outpatient Setting in India," at the XIV International Congress of Dietetics. Session Title "Evidence-Based Medicine: How does it apply to Nutrition;" Presiding Officer, Esther F. Myers, Ph.D., R.D., F.A.D.A., Director, Scientific Affairs and Research, American Dietetic Association; and Co-Speakers Naomi Trostler, Ph.D., R.D. (Israel), Chris Bieseemeier, M.S., R.D., I.D.N., F.A.D.A. (USA), and Laura Stewart, B.Sc., B.A. (Hons), S.R.D. (Scotland).

The Commercial Nutrition Partnership — expertise acquisition began through exposure to industry (local pharmaceutical company claiming to be pioneers in zinc therapy in Indian context) sponsored nutrition research protocol on iron-zinc formulation in urban and rural population in 1982.

Deep insights into the working mechanisms of the local/regional, national/multinational nutraceutical/pharmaceuticals and food industry was facilitated by the applicant's unique position as program coordinator and subsequently Secretary, Indian Society of Parenteral and

Enteral Nutrition (ISPEN). Professional ethics and code of practice generally preclude any direct or official interaction between the industry and the professional. The applicant's social marketing model evolved in collaboration with Smithkline Beecham for nutrition education to community and her presentation titled "Social Marketing Concept in Nutrition Education" at the 3rd Asian Congress of Dietetics, Kuala Lumpur, 18 to 21 August 2002, were zenith in the applicant's endeavors to promote nutritional health awareness.

The Community Nutrition Partnership — initiated as a one-to-one interaction and as a part of dietetic counseling initially, the major mass scale exposure to this aspect was in 1987 to 1988, through a highly acclaimed non-government organization (NGO) working within and beyond the city limits of Chennai, as its project coordinator. The project SCOVA (Standing Committee on Voluntary Agencies), was a pilot study titled "Integrated Family Nutrition and Workers Training Scheme," granted to Sree Seva Mandir (Temple for Service to Women), Chennai and Ministry of Health and Family Welfare, Government of India. This project exposed the applicant to the most significant aspect of India and as stated by the Father of Nation, Mahatma Gandhi, "Ninety percent of Indian population resides in its villages," the rural community in technical parlance. In 1993, the project findings were presented and abstracted in the proceedings of the XV International Congress of Nutrition, Adelaide, Australia "Integrated family nutrition and workers training scheme — A Pilot Study," Abstract #19. It also presented a rare opportunity to the applicant to interact extensively with government and banking functionaries and be a delegate converted to resource person at NABARD Workshop on marketing strategies for NGO generated small scale/cottage industry products.

In January 1988, the ultimate accolade for this partnership was being placed on the editorial board of the *Workshop Manual on National Health Policy*. The *Workshop* participation itself was a prestigious event as it was under the aegis of Tamilnadu Voluntary Health Association of India (TNVHA), a secular non-profit association of voluntary hospitals, dispensaries, health and community development centers, registered in 1970.

### **Partnerships in Action — Sri Lankan Context**

The Clinical Nutrition Practice Partnership:

- The College of Anesthesiologists of Sri Lanka initiated the first ever act of bestowing recognition to Clinical Nutrition. At the pre-congress workshop on January 25, 2002, the applicant extensively covered "Recent Advances in Clinical Nutrition" — malnutrition, significance of nutrition support and Nutritional assessment criteria in hospitalized patients, enteral nutrition highlights and nutrition support in critically-ill patients. The Sri Lanka Medical Association (SLMA) Auditorium, Wijerama House, Colombo 7, witnessed a full capacity participation for six hours at a stretch, endorsing the rising status of medical nutrition therapy amongst the physicians.
- Navaloka Hospital, Colombo, a major private sector hospital, arranged an interaction with their staff physicians on "Significance of Nutrition Support in Hospitalized Patients," 26 January 2002.

- Government General Hospital, Kandy, Sri Lanka, organized "ICU — Nutrition Grand Rounds," 29 January 2002.
  - Mr. Alex Stewart, Australian physiotherapist and coaching team personnel for the cricket board of Sri Lanka and the minister for sports council of Sri Lanka, initiated dialogue on nutrition supplements and support to Sri Lankan athletes and national cricket team.
  - Since the dietitian workforce was yet to be created, Navaloka Hospital, Colombo, deemed it appropriate that the nursing school and nursing staff be updated. Hence "Nutrition Support Principles for Nurses" session was organized on 30 January 2002 by their lone dietitian who had earlier trained under the applicant at Chennai.
  - The College of Physicians of Sri Lanka invited the applicant to address and update them on the burning issue of evidence-based medicine. The applicant delivered a lecture on "Evidence-Based Medicine and Nutrition" on 21 May 2004, SLMA Auditorium.
  - The College of Surgeons of Sri Lanka invited the applicant to address and update including their aspiring PG students on "Application of Nutrition in Surgery" on 21 May 2004, at their Colombo Headquarters.
  - Sports Council of Sri Lanka invited the applicant to address a large gathering on "Nutrition for Athletes," June 7, 2004 at SLMA Auditorium. A rare combination of senior and leading academia ranging from professors of physiology, rheumatology, sports medicine, etc., to field force in the gyms and nutrition students participated in this interaction, emphasizing the gaining popularity of sports nutrition.
1. The Commercial Nutrition Partnership  
[Novartis Nutrition](#), Switzerland's Sri Lanka arm, has been relentlessly supporting the cause of nutrition principles and education and dietetic practice — a true example of social marketing tool for partnership in action between the multinationals and professionals.
  2. The Community Nutrition Partnership  
"Nutrition Principles for Health" — executives and heads of departments and specially invited members of public session, were given an insight on the diet dimension to their health as a commitment of a private sector hospital by Navaloka Hospital, Colombo, Sri Lanka, 30 January 2002.
  3. [Daily News](#)  
Established in 1918 and the quality *English Daily* with the largest circulation trusted by readers in Sri Lanka, interacted with the applicant to highlight nutrition and health to the Sri Lankan public through their column "Health Watch." The applicant was the chief guest to choose winners of the Medical Crossword Competition, sponsored by Novartis Nutrition.

The applicant has been instrumental in supporting the kindled awareness and the outcome has been tremendously encouraging. Besides, the interactions listed above, it has been heartening that two major policy level decisions and third major breakthrough have resulted this year as delineated below.

1. The [Wayamba University of Sri Lanka](#), Department of Nutrition and Community Resources Management (NCRM) has established "Nutrition Society of Wayamba University." The applicant has offered unstinted support and has urged them to consider formation of the Dietitians of Sri Lanka or upgrade their existing nutrition society to Nutrition Society of Sri Lanka, and consider working towards getting recognition at the Asian Federation of Dietetic Associations during its Manila, Philippines meet in 2006 and later at the ICDA Japan 2008 meet.
2. The Government of Sri Lanka has officially created TWO posts for dietitians in National Hospital, Colombo.
3. The applicant has been invited to present to the President Elect, Medical Council of Sri Lanka, a proposal similar to the one presented to the Indian counterpart beginning of this year as elaborated under the Indian section of this essay.

## Summary

This essay summarizes (detailing beyond the scope of this write-up) the applicant's career growth, the scope of the applicant's practice and influences on clinical nutrition/dietetic practice and nutrition education in India. One swallow may not make a summer, but it is every drop of water that makes an ocean, and the efforts of the applicant therefore in Sri Lanka vindicates her beliefs. That her maiden attempt in India is on the verge of being duplicated, replicated and catalyze the much-needed change in the scenario of nutritional care, not only in Indian hospitals but also in Sri Lanka, emboldens her to dream on. She proposes to venture in attempting implementation of a similar exercise in Bangladesh and Nepal, and establishing a workable networking link also with inclusion of Pakistan in the years to come under the geographical compulsion of being the Indian Subcontinent.

"Trinity of Nutritional Challenges in Life — Community nutrition, Clinical nutrition and Commercial nutrition," that one has to constantly encounter right from conception to birth and until death, in health and in disease. The essay applicant developed and strongly subscribes to this premise and hence endeavors that her dietetic education and practice should encompass all the three aspects. Her insatiable quest for adventure and the newer vision to incorporate these three nutritional challenges from the Social Marketing Concept and on a corporate angle, has her set on exploring expedition as the CEO, Vaajini NutriHealth Pvt. Ltd.

2005

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## Mexican/American Exchange for Cross-Cultural Nutrition Education

By: Carolyn M. Bednar, PhD, RD, LD

Monterrey, Mexico is only 600 air miles from Denton, Texas, but its inhabitants are a world apart in cultural differences from their American counterparts. Still people in both countries are interested in improving health through eating nutritious foods and practicing a healthy life style. Dietetics in Mexico is a younger profession than in the United States. Standards for certification of dietetics/nutrition professionals were only recently approved in 2001 by the [Mexican College of Dietitians](#), and there are currently only 119 dietetic/nutrition professionals in Mexico who have earned certification. Their standards are patterned after dietetic education standards developed in the United States. After finishing courses for a baccalaureate degree in nutrition, Mexican students complete one year of supervised practice working for government agencies, foodservice organizations, hospitals and health care facilities, sport centers or restaurants. The national profile of licensed nutritionists in Mexico states, "They are professionals who evaluate the nutritional status of individuals and populations. They manage nutrition, food and education programs. They are able to develop research and to join with health care teams to have impact on the nutritional situation. They use prevention promotion and health care strategies to improve the nutritional status of the population."

The United States has over 70,000 registered dietitians. The [Commission on Accreditation of Dietetic Education \(CADE\)](#) sets standards for dietetic education, reviews programs on a periodic basis and oversees testing and registration of dietitians. In order to become a registered dietitian, individuals must complete a four-year degree program with coursework approved by CADE and an approved supervised practice program plus a national examination. In the United States, dietitians are trained with a broad background of skills including skills in medical nutrition therapy and advanced nutritional support. They frequently work with teams of health professionals in acute care hospitals where they see only acutely ill patients.

Nutrition/dietetics students and faculty at [Texas Woman's University](#) have been learning about cultural differences and similarities to their Mexican counterparts for the past three years. Since 2002, Texas Woman's University and the [Universidad Autonoma of Nuevo Leon, Mexico](#), have participated in an "Agreement of Cooperation." The Universidad Autonoma is a state university in Mexico in the state of Nuevo Leon close to the American border. The university has a total enrollment of over 100,000 and a School of Public Health and Nutrition that has about 600 undergraduate students studying nutrition. Texas Woman's University (TWU) is a state university in Texas with an enrollment of approximately 10,000 students and a Department of Nutrition and Food Sciences that has about 165 undergraduate student majors and 150 graduate students.

The cooperative agreement between the two schools has the following objectives:

- Promote institutional exchanges by inviting faculty and staff of the partner institution to participate in a variety of teaching and/or research activities and professional development
- Receive undergraduate and graduate students of the partner institutions for periods of study and/or research.
- Organize symposia, conferences, short courses and meetings on research issues.
- Carry out joint research projects.
- Encourage student enrollment in continuing education programs.
- Exchange nutrition education materials.

During the three years the agreement has been in effect, many cooperative activities have been carried out. Several TWU faculty have visited Monterrey to speak at symposia, conferences and workshops on topics such as weight management, eating disorders and computer applications related to nutrition and foodservice management. A Mexican faculty member assisted with reviewing an educational videotape, "Food Safety for Families," produced by TWU in the Spanish language. The main benefit of the cooperative agreement, however, has been an annual exchange of students and faculty each year since 2002.

### **American Students Visit Mexico**

In summers 2002 and 2004, groups of 10 to 11 graduate students from Texas Woman's University plus one faculty member traveled to Monterrey, Mexico, for a three-credit graduate course entitled "Diet, Nutrition and Public Health Programs in Mexico." The steps that were taken to organize and facilitate this course were as follows:

1. Course description, objectives, course components, assignment, grading criteria and a tentative schedule of course activities were developed jointly. Textbooks and educational resource materials were also selected. The main textbook used was *Public Health; What It Is and How it Works* by Bernard J. Turnock, Aspen Publishers, 2001. Internet Web sites were also helpful. Faculty at the Universidad Autonoma shared responsibilities for teaching various sessions of the course, giving demonstrations and arranging field trips. For some sessions, a translator was arranged. All Mexican faculty who assisted were given a certificate signed by administrators at both universities.
2. Approval for an out-of-country course was secured from administrators at Texas Woman's University and the Texas Higher Education Coordinating Board. An application was submitted in January, five months prior to the time of the course. In order to receive three hours of graduate credit, the course needed to cover at least a portion of three weeks.
3. Arrangements were made for transportation. Faculty from the University Autonoma agreed to pick up the American students at Laredo, Texas, in a van and drive them to Monterrey (a five hour trip). The flight from Dallas/Fort Worth Airport to Laredo cost each student about \$170 round trip though a regional airline.
4. Students were recruited through flyers and announcements. Students were advised to apply for a passport and make arrangements for air flight to Laredo.

5. Housing arrangements were made. American students were given two options: stay at homes of Mexican professors or students or at a hotel in Monterrey, two students to a room.
6. Plans were made to provide meals to the American students during the nine days they were in Monterrey.

Total cost of the course and trip for the American students was less than \$1,000. This included charges for course tuition and fees (approximately \$615.00 in 2004 for residents of Texas) plus \$170 for a round trip ticket to Laredo. The students also incurred expenses for books, souvenirs and incidental items.

## **Mexican Visitors to US**

During summer 2003, ten Mexican faculty and graduate students traveled from Monterrey to Denton, Texas. Plans are currently underway for a similar trip during summer 2005. Since the Mexican visitors did not wish to register for an official university course at out-of-state tuition rates, a course was organized and taught informally with faculty and other speakers donating their time. Students who completed the course were given a certificate signed by administrators from both universities.

The following steps were taken to organize the course and make plans for the Mexican visitors.

1. The course was developed to cover topics of interest to the Mexican visitors (nutritional support, nutrition in critical care, metabolic response to injury). Texas Woman's University faculty and area dietitians agreed to be guest speakers. Course plans also included a visit to the university library to explore nutrition resources available on line, a visit to a large regional food show, field trip to a local hospital and demonstrations by pharmaceutical companies. A graduate student from Mexico agreed to donate time as an official interpreter for the course. Since the visitors were not fluent in English, arrangements were made to rent headphones (cost \$600) that could be used for simultaneous translation of speakers. Since the course was not an official university course, no approvals outside of the Department were needed.
2. A university van was scheduled to provide group transportation from the airport to host homes, for field trip days and for a shopping trip. Total cost of the van was about \$175 since a faculty member who was an authorized university driver drove the van for most of the outings.
3. Housing arrangements were planned for the 10 Mexican visitors. Four faculty members volunteered to provide housing for two or more visitors in their homes.
4. Meals were arranged as follows:
  - a. Host families provided breakfasts and drove visitors to campus
  - b. Four lunches were planned and prepared by graduate students at the university, and one lunch was provided by a local hospital.
  - c. Three evening dinners were provided by a local dietetics group and dietitians in their homes. One dinner was provided by nutrition faculty at a nearby private

school, Texas Christian University. One dinner was purchased by the visitors at the time they were visiting a local shopping mall.

Total cost of the trip for each Mexican visitor was approximately \$345.00 for the round trip air ticket between Monterrey and Dallas/Fort Worth Airport. The only additional expenses were shopping money that each visitor spent on the trip to the shopping mall.

### **Suggested Model for Similar Project**

In summary, the steps that need to be taken in organizing a similar project are:

- |            |  |
|------------|--|
| Step One   | Locate a willing partner institution in another country. Communicate by email and personal visits to arrange terms of an agreement. Secure permission of administrators at both educational institutions |
| Step Two   | Plan a course of interest to the opposite partner institution and invite them to attend your campus for a 6-9 day visit.   |
| Step Three | Arrange for volunteer teachers, guest speakers, field trips and recreational activities.   |
| Step Four  | Arrange for interpreters and rental of head phones to facilitate translation of lectures.  |
| Step Five  | Make arrangements for transportation for visiting students and faculty.  |
| Step Six   | Make arrangements for housing and meals for visiting students and faculty.   |
| Step Seven | Host visitors for 6-9 days with cooperation of faculty, students, local dietitians and other community volunteers.   |

Such a project cannot be successful unless there is a team effort by faculty at each school and other professionals in the community. The availability of computers and use of e-mail can expedite communication for those involved in such a project. Knowledge of language is helpful, but not absolutely necessary; however, everyone involved must be sensitive to cultural differences and customs. Although faculty and others who assist with such projects may be willing to forego monetary compensation, small gifts and printed certificates can convey thoughtfulness and appreciation. This type of project, which provides graduate students the opportunity to immerse themselves in another culture, can reward and enrich their lives far beyond the few weeks of the course. A visit to another country and close contact with the people and their everyday surroundings can be a life changing experience.

From this project, it has become clear that Mexican health professionals focus on preventing health problems through education of the public. At their university, faculty and students work

in community clinics to advise people on weight management, eating disorders, diabetes, diet during pregnancy and pediatric nutrition. The Mexican faculty and students appear to have a better grasp of public health education than most American nutrition faculty and students. On the other hand, the American faculty and students are trained with a broad base of knowledge and advanced clinical nutrition skills. It is obvious that both sides have gained from interaction with the other. In the words of one student who participated in the exchange visit to Mexico, "I have been able to see that there is much work that can be done on both sides of the border to increase and improve public health. There are different focuses on either side, but we have the same goal in mind."

# **An International Partnership Between the Yellow Window Association in Korea and the Mongolian University in Mongolia: From the Initiation to the Expansion of School Foodservice Programs in Mongolia**

*By: Sunny Ham, PhD, MS*

School foodservice is essential for improving the health status and academic performance of children. Developed nations are equipped with financial resources, established organizations and scholars and researchers to accomplish the mission of the school foodservice program. However, there are still many countries, especially in Africa and Asia, where children do not get the nutrients adequate for their growth and a healthy life, due to the poverty and political instability of these nations. This statement introduces the development of a school foodservice program in Mongolia. The school foodservice project was initiated in 2002 in Mongolia by collaborating with Korea. As the initial project proved successful, a further project is proposed to expand the school foodservice program through the nation. The example of Mongolia can serve as a model for practicing nutrition programs for children in developing countries.

Mongolia is located in middle northern Asia, between Russia and China. It has 240 million people, of which approximately 40% work in agriculture and ranching. Mongolia is experiencing economic difficulty due to the transition of the economic system from communism to capitalism; the GNP in Mongolia is \$380. Since the major industries of agriculture, mining and ranching in the nation have a very low productivity rate, Mongolia must import fruits, vegetables and other daily necessities from adjacent Russia and China. Because of the strong presence of the ranch industry, Mongolian citizens have traditionally consumed a lot of meat and milk products, including animal fats and alcohol. The consumption of fruits and vegetables is very low. In addition, the low production of fruits and vegetables due to the cold and dry climate, combined with the high price of importation, has encouraged this tradition. Reflecting its food consumption patterns, the population lacks essential nutrients such as Vitamin A, Vitamin D, Iron and Iodine. Not surprisingly, the population has a high incidence of cardiovascular diseases, cancer and obesity induced by the high consumption of animal fats.

## **Need For a School Foodservice Program in Mongolia and Forming a Partnership with Korea**

In 2003, there were 537,400 students in 686 schools in Mongolia (232,400 in grades one through four, 232,000 in grades five through eight and 73,000 in grades nine through 10). A group of experts in Korea and Mongolia collaborated to identify the problems associated with Mongolian children's health and to develop a nutrition program to improve children's nutritional status. The project has been conducted by the Mongolia Center for the Improvement of Nutrition (MIN) at the [Mongolian University of Science and Technology \(MUST\)](#) in Mongolia and the Yellow Window Association for Nutrition Improvement in Korea. Below is a description about forming a partnership of the two organizations.

The Yellow Window Association for Nutrition Improvement is a sub-organization of the Yellow Window Association. The Yellow Window Association, a non-profit organization, strives to help unprivileged people in undeveloped countries. The association identified 78 countries (three in South America, 48 in Africa, 26 in Asia and one in Oceania) who are deficient in food and nutrition/safety, and health, by utilizing credible information from world famous International Organizations (UNICEF, WHO, World Bank). Then, they provide services to improve the living environment of the locals. The Nutrition Improvement Team plays a role in improving the nutritional status of the recipient countries. In 1993, the Yellow Window Association launched a foodservice company called Soo-Yang Foodservice Corporation, which was dispatched to Mongolia. Since 1994, the Nutrition Improvement Team has managed the foodservice operations at the Mongolian University of Science & Technology. Through the process, Mongolia realized the need of nutrition experts, which led to the birth of the Mongolia Center for the Improvement of Nutrition (MIN). The MIN was financially invested by two parties, Mongolian University of Science & Technology and Soo-Yang Foodservice Corporation of the Yellow Window Association. It was the collaboration of the Yellow Window Association and the Mongolian University of Science & Technology, which led to a partnership between Korea and Mongolia.

The mission of the MIN is to improve the health of the nation by conducting a variety of activities, including education, material development, research, promotion and policy-making. The MIN has contributed to academia, to society and to medicine, while being a pioneer in the Mongolian nutrition field. The MIN developed a nutrition major in the college (the first in the nation) and supported course curriculum, educated nutrition experts, initiated research on hospital foodservice (until then no foodservice was provided in Mongolian hospitals), researched Mongolian's food consumption pattern, operated counseling centers and so on.

One of the focused areas of the MIN is on school foodservice for children. The MIN and the Nutrition Improvement Team of the Yellow Window Association first identified the following list of nutritional problems in Mongolian children: 12.5% of Mongolian children ages five or less are under weight and 24.5% are stunted; children do not consume enough iron, vitamin C and vitamin B12 and 42% of the preschool children are anemic; under-consumption of calcium has impaired bone density and teeth, which leads to osteoporosis when they become adults; not having lunch at school causes students to develop hypoglycemia, which lessens their brain activity and their ability to think; Children from low-income families showed a malnutrition status that is three times higher than others. Those children are slow in growth and their physical capability is low, as they are not supplied with an adequate amount of daily essential nutrients; since 71.4% of the Mongolian soil is deprived of iodine, much of the population is diagnosed with goiter, which deters children's mental and physical development; the lack of vitamin A negatively affects children's body weight and eyesight. A food industry equipped with modern techniques should be developed to provide children with foods that have the necessary nutrients.

## **Planning and Initiation of a School Foodservice in Mongolia**

Considering the critical nature of the identified nutrition problems prevalent to Mongolian children, the MIN and the Nutrition Improvement Team concluded that there is a great need for school foodservice for children in Mongolia. They indicated two goals for such a foodservice program:

- To supply nutritious and safe foods to the Mongolian population.
- To solve the children's and adolescents' serious nutritional problems which are caused by malnutrition.

The following nutrition objectives were then established.

- Nutrition Objectives: Students will be provided with meals which are adequate for mental and physical development; nutrition education will be provided to students and parents to educate them on good eating habits. And children in severe malnutrition need doctors' attention and these requests are made through the MIN. A positive development has been the initiative that the Mongolian government is taking in this endeavor; the Mongolian government is promoting the nutrition education through mass-media and MIN also participated in educational programs for television.
- Food Industry Objectives: In order to achieve adequate consumption of minerals, vitamins and proteins, food items abundant in Mongolia will be utilized and new food items will be developed by applying internationally approved industry techniques. Education on new technologies will be provided to school foodservice employees.
- Administration Objectives: An organizational structure of the school foodservice operations will be established and sound management techniques will be fostered. In compliance with the program practiced by the Mongolian government, "Food Supply/Distribution Safety and Nutrition," improved methods will be developed to provide students with safe foods.

## **Implementation of the Initial Project**

University, government and non-profit organizations in Korea and Mongolia partnered, and developed and implemented an initial school foodservice project in Mongolia. The initial school foodservice project was launched at the Erchurlung elementary schools and practiced during the 2002 to 2003 school year. The project provided foods and menus which met students' physiological requirements and preferences in order to enhance their satisfaction with the school foodservice, while supplying seasonal food items. By providing the school foodservice, they wanted to: improve students' class participation; enhance students' mental capacity; educate students about food safety; and provide a sound educational environment. The project was successful on a number of important fronts: The program provided nutritious meals and elevated students' satisfaction by building a new foodservice dining and kitchen facility; the program enhanced the students' physical capabilities while evaluating the school's foodservice and meals eaten at the school; the program developed a model for a school foodservice dining and kitchen facility; the program provided students with foods which were adequate to their age and body size; the program analyzed the nutritional values of meals eaten at school, which were

included in a menu card, enhancing the students' nutritional education; the program examined students' and parents' school lunch satisfaction; A menu card of 80 meals and a CD, bulletin boards and booklets which contained nutritional knowledge were developed and supplied to the Erchurlung school; a booklet on nutrition education for parents was developed and distributed.

## **Expansion of a School Foodservice Program in Mongolia**

As the initial school foodservice project in Mongolia proved very successful, the partnership is proposing to expand the school foodservice project throughout the nation. The purpose of this project is to expand school foodservice programs in Mongolia by fostering experts, promoting the importance of a school foodservice program to the general public and establishing school foodservice programs strategically throughout the national school system. The long-term project goals are to improve the food consumption patterns and eating styles of children and to further improve the Mongolian population's health status.

### **Details of the Project**

It is expected that it will take longer than 10 years until adequate school foodservice is provided to all Mongolian schools. The first proposed project is for a five-year period and a continuing project will be proposed after the first project is completed. The currently proposed project will start in September 2005 and is scheduled for completion by August 2010. Three elementary schools (two in Ulaanbaatar and one in a rural area) will be participants of the project. Three to five hundred students in grades four through seven from each school will be involved. School lunches will be provided to the schools for three years through this project. As this project is an international collaboration of two countries, the committee for the project is comprised of two parties, one from Mongolia and the other from Korea. The Mongolian party includes a representative of the Mongolian government, a representative of Mongolian University, the Director of Mongolia Center for Improvement of Nutrition, researchers and staff, and Principals of the participating schools in Ulaanbaatar. The Korean party consists of a representative of the Yellow Window Association for Nutrition Improvement, a representative of the Soo-Yang Foodservice Corporation, experienced registered dietitians (RD) and staff. The major role of the committee from the two nations is to review and make a decision on the overall agenda about practicing school foodservice programs in Mongolia. Specifically they will work on the selection of the participating schools, budgeting, hiring personnel and will provide consultation on the policies and regulations for school foodservice programs.

### **Implementation Plan**

The five-year period project will be implemented through a series of activities.

1. The selection of the participating schools will be conducted in three stages in terms of expanding school foodservice through the nation: first stage participants come from

schools in middle-income class in a city; the second stage will be schools in poverty in the city; the last will be in a rural area.

2. In March 2005, Mongolian representatives (government official, university scholars and administrators) of the project visited Korea and observed school foodservice operations, Korean Department of Education, [Korean Dietetic Association \(KDA\)](#) and collected information essential for policy, regulations and personnel recruitment.
3. In late May 2005, Korean experts in school foodservice (government official for policy making, dietitians in school foodservice and former MIN Director) will visit Mongolia and will deliver a seminar to Mongolian representatives to advertise the value and importance of school foodservice. At this visitation, the selection of schools who will be participants in the project is planned.
4. Experienced dietitians from Korea will work for the first exemplary schools until the school foodservice is established. Then the local Mongolian dietitian will replace the Korean dietitians as the Mongolian experts will be trained by the MIN.
5. Initial funding for the school foodservice operations in Mongolia for this project will be supplied by the Yellow Window Association. Further funding will be raised by the Mongolian government and the Mongolian University of Science & Technology together with the Yellow Window Association.

## Summary

This statement introduces a successful example of an initiation of the school foodservice program in Mongolia and then shares the proposed project to expand school foodservice programs throughout the nation. This international collaboration project can serve as a model for the development of a nutrition program in developing countries to enhance the nutritional well-being of the children. Through the initiation, development and expansion of the school foodservice projects in Mongolia, the partnership ultimately strives to achieve the long-term goals: to evaluate students' health and physical capability; to identify a method to improve students' foods and nutrient consumption; to improve the entire population's food consumption; to enhance the whole population's knowledge of meals or foods; and to improve the whole population's health index. The initial and proposed school foodservice projects in Mongolia will provide a healthy environment for the children, the whole nation and developing countries like Mongolia. Efforts by researchers, government, non-profit organizations and anonymous volunteers will make the dream come true.

Dr. Sunny Ham, an assistant professor in the Nutrition and Food Science Department at the University of Kentucky in the United States, while involved in Korean nutrition/dietetics society with her expertise in school foodservice, was introduced to the Yellow Window Association for Nutrition Improvement. She is committed to providing consultation on the Mongolian school foodservice project. In addition, she plans to provide efforts on education and seminars on school foodservice by introducing US and Korean models which will benefit the Mongolian children and citizens. On behalf of the Yellow Window Association, she is very honored to have an opportunity to share the valuable endeavors with the American Dietetics Association. Special thanks go to Professor Enkhtaivan, a Mongolian representative of the project, and Ms. Jisung

Woo, the Director of the Nutrition Improvement of the Yellow Window Association in Korea, for their enormous contribution and enthusiasm for the project and providing visual materials for this statement.

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## **Helping Restore Livelihoods and Build Self Confidence through Sustainable Strengthening of Resource Base of Caregivers in their Struggle to Improve the Well-Being of Orphans in Zimbabwe**

*By: Prisca N. Nemapare, PhD, CNS*

One of the challenges of our generation is HIV/AIDS. A pandemic of this disease is currently being experienced most severely on the continent of Africa, and the country of Zimbabwe has been no exception. In fact, Zimbabwe ranks among the highest in the world in rates of HIV/AIDS infections. As an advocate for citizens of Zimbabwe, her homeland, Dr. Prisca N. Nemapare, PhD, CNS, has worked in community nutrition and public health over the past two decades to positively improve the nutritional health of women and children in rural communities of Zimbabwe. Most recently, her work focuses on AIDS orphans.

As co-founder and Chief Program Officer for [The Zienzele Foundation](#), a non-governmental organization focusing on the needs of children orphaned by HIV/AIDS and their caregivers, her innovative work in rural Zimbabwe has shed light on this issue and has improved the nutritional health and overall well-being of women, children and households in these communities.

As a native of Zimbabwe, Dr. Nemapare worked diligently as a young woman and was able to come to America to study. She completed her BS degree in Food and Nutrition and MS in Food Science at Alabama A&M University, Normal, Alabama, and her PhD in Human Nutrition at University of Tennessee, Knoxville, Tennessee. Dr. Nemapare has had a notable career as a nutrition scientist. Her career in academia began at Ohio University in the School of Human and Consumer Sciences. While at Ohio University, Dr. Nemapare's scholarly work focusing on the well-being of women and children was supported by the prestigious [Earthwatch Institute](#), Maynard, Massachusetts. Her work led to the development of the [Institute for the African Child at Ohio University](#), a unit focusing on the teaching, research and service related to Africa's most marginalized resource, their children.

With the explosion of HIV/AIDS in Africa, Dr. Nemapare left Ohio University in 1998 in order to focus her efforts on improving the lives of individuals and families suffering the effects of HIV/AIDS. A picture is worth a thousand words; therefore, [The Zienzele Foundation](#) Web site is an excellent "picture" that highlights her current work. Education and economic development, as well as health and nutrition assessment, are all part of Dr. Nemapare's efforts, with promoting sustainable self-sufficiency as a priority.

Caregivers are those individuals who care for orphans in communities served by The Zienzele Foundation. They range in age from 45 to 85 years of age and are from 500 households. Eighty percent of these households are headed by grandmothers aged between 45 to 85 years of age, a majority (70%) of which are over 60 years. Many of the caregivers are terminally ill, blind or generally in poor health due to advanced age.

Dr. Nemapare's work consists of assisting caregivers in improving their access to food and in paying children's school fees. This work began at a time when the government's land policy changed which resulted in many of the funding agencies leaving the country. Sources of funding dried up immediately. Yet the problem of orphans being cared for by grandparents and child-headed households continued to escalate. Therefore, it was imperative for her to take swift, effective and sustainable action to remedy the crisis. Building on her previous work, she approached the caregivers and discussed with them the idea of making traditional baskets, which in turn, The Zienzele Foundation would purchase and resale them to generate funds. These funds are sustaining these women-led micro-enterprise projects that improve food security and education of AIDS orphans.

While groups agreed to the proposal, a formal commitment in the form of a contract was developed, and the groups signed. Exempt from basketry were those caregivers who were so old that they could not see anymore or were infirm. Overall, the average number of orphans each caregiver is caring for is four. Considering the limited resources caregivers are operating under, the average number of orphans being cared for is quite high.

Part of the contract stated that the money that groups generated from making the baskets had to be handled three ways. They were to: 1) have a savings account, 2) reinvest into the project and 3) share the rest. Besides being a market for their baskets, the Foundation would assist them in starting gardening, sewing, poultry-raising, as well as soap and peanut butter-making projects. In sum, these sustainable projects are all income-generating projects that improve the food security of caregivers, and ultimately the nutritional status and educational level of children.

Depending on the project, the caregivers organized themselves into groups of 10 to 20 members. Next they chose a committee which constitutes a chair, deputy chair, secretary, treasurer and a committee member. They also are expected to develop a constitution in which they state their goals and objectives, as well as governing rules and regulations. Each week they are expected to come together and work on their project. The only exception is the gardening, where members meet daily to water vegetables and care for the garden.

Members have to belong to at least one project. Because caregivers struggle to make ends meet, they usually will join several projects. This provides them with a better chance of generating a bit more money for food and school. Meetings have become weekly social gatherings where members work and teach each other to make baskets, for example, as well as to discuss problems and give each other ideas and/or advice on how to resolve some issues. Getting together to work on their projects has evolved into a community support system for the caregivers.

Caregivers are carrying an enormous burden, including plowing in their fields, producing food in the fields and keeping food on the table for their charges daily. Making sure food is available is one of the most difficult problems that caregivers face on a daily basis. Therefore getting involved in the projects has helped their families evade starvation.

Currently, the savings accounts of these groups range from Zim \$200,000 to Zim \$670,000 (US \$2.00 to US \$6.70). This level of savings is a very small amount. Yet to these women, it is an unprecedented, stunning achievement. It has also been very empowering and has given them enormous confidence. The average yearly income in Zimbabwe is about US \$700, yet these would earn far less than this average without these projects. The savings account money has been loaned to members to buy food. In some cases, when a member is faced with tragedy (i.e., death or terminal illness), the group comes together and decides to take some of the money out to help the affected member. Because of the current food problems, members are borrowing to purchase food, fertilizer and seeds for planting in their fields.

To illustrate how projects have effectively and sustainably changed lives, Mai Zviitire (not her real name) was widowed six years ago and was left with seven children ranging in age 10 months to 14 years of age. She was the sole supporter of these children. At the death of the husband there was very little, in terms of resources, that the family had. Her home was in the area where The Zienzele Foundation work started paying fees for children. When the Foundation met with community leaders and members to explain what it intended to do, she was one of the first caregivers to join the groups.

At this same time, the caregivers agreed to form basket making and garden groups. She promptly joined both of them. Since the time was getting close to the time of the rainy season, the group requested that could they begin by soliciting maize seeds from the Foundation. The Zienzele Foundation agreed on condition that each caregiver makes three 30-centimeter baskets as payment. They were given three months to do it, and they would receive the seeds. This was done because the Foundation does not support the notion that individuals or groups be provided with things without them having to work for it. The group gladly agreed to this arrangement. They were supplied with maize seeds the same time baskets were collected. Garden projects had already started so the community was already benefiting by this time. The giving of seeds in lure of the baskets went on for three years in a row.

Mai Zviitire worked very hard to support her family. Availability of seeds through working with The Zienzele Foundation helped. She grew corn every year and when she timed her crop well (early planting), she managed to harvest quite a bit. She also began to save maize seeds for the next planting.

Mai Zviitire also joined the garden group. Here she excelled in producing vegetables which she was feeding the family, as well as selling to generate income. Through working with other caregivers, she sold old vegetable leaves to those who were raising rabbits in lure of her being given a female baby rabbit which she eventually mated, and she produced her own which she fed to her family as well as sell.

This has helped Mai Zviitire to certainly increase her family's access to food and improve their nutritional status. Many caregivers are making a fairly comfortable living due to their involvement in these projects. Besides school work books and pencils, she is also able to purchase basic commodities such as sugar and iodized salt from proceeds from these projects.

Yet, the most important and significant outcome from these projects is how these caregivers have gained in self-esteem and confidence.

Many success stories could be told. Suffice it to say, however, that overall, this work has resulted in all participating households being able to afford food and education. In the past six years of severely low rainfall in this region, in particular, these families, like Mai Zviitire, have been able to purchase maize (staple food) and have continued with the gardens. Results of this effort have seen improved food intake. In 2003, a food availability survey was carried out and results showed improved access to food in all the households even though total nutrient intake was still insufficient. This year there will be another health assessment which will include again evaluate access to food, food intake, nutrient intake as well as hemoglobin levels.

Initially, The Zienzele Foundation was only serving three schools; however, currently it has expanded to 18 schools. This means that there are 17 groups making traditional baskets, four sewing, four peanut butter making, two soap making and 24 gardens projects. Many more communities are now interested in starting such projects. This means more starting money is needed to get projects in these new communities get started. The types of inputs required to get a project and to sustain it very minimal. It has been amazing to observe how so little has benefited so many.

## **Incorporating Nutrition Education: An Affordable, Nutritious and Convenient Weaning Food and Income Generation into an Infant Feeding Project in New Delhi, India**

*By: Barbara L. Jendrysik, MS*

The year was 1991, the place was New Delhi, India. As I drove my Toyota down the dusty, winding road into the section of the city known as Kotla Mubarakpukur, the road was congested with pedestrians, bicycles, carts, trucks and the occasional water buffalo roaming the streets. One of the students in the car said we should park just before the railroad tracks and walk the short distance into the "juggi" (slum) area. The two students would soon deliver the cooking demonstration in Hindi. We walked down the narrow paths between the houses, past goats, and started to attract the interest of many children. We went to Santosh's house and started to unpack our things. Women with small babies had been told that there would be a cooking lesson that day and they were starting to assemble. We had infant weaning food ingredients packed into plastic containers, bottled water, UHT milk, an assortment of utensils and our charts and posters on this day's topic. It had taken a long time to get to this phase of the project, the annual return of community members to their villages, summer heat and monsoon floods had caused unexpected delays. We had interviewed families in the community and mothers with children between the ages of four months to three years to learn about their infant feeding practices. We developed a weaning food and were marketing it during cooking demonstrations/nutrition lessons. There were many factors that influenced the health and nutritional status of these women and infants, some comprehensible and others completely new to me, a foreigner, in spite of my living in many other countries during the past twenty years. The following provides a picture of the social, cultural and environmental factors impacting these mothers and infants in New Delhi. It explains how an infant feeding project was designed to help improve the nutritional health of infants in an urban slum in New Delhi.

New Delhi has witnessed one of the fastest growth rates when compared to other metropolitan cities. The steady migration of rural labor to urban areas in India has resulted in a rapid proliferation of urban slums. These poor face increased health risks from poor sanitation, insufficient and unsafe water supplies, poor personal and food hygiene, inadequate garbage disposal, indoor air pollution, and crowded and inferior housing. Severe forms of protein-energy malnutrition, kwashiorkor and marasmus, are found among children. Infants exhibit a slower rate of growth. One explanation is that in poor urban communities, supplementary foods are not introduced until much later, in some cases, not until the infant is 12-18 months of age, thereby increasing the chances of malnutrition. Weaning practices of mothers in these communities are influenced by social networks, kinship, religion, and sex-related taboos. Faulty feeding practices can arise from ignorance, superstition and food misconceptions. Environmental factors such as housing conditions, water supply, sanitation, disease and availability of adequate food also play a role. However, the problems of malnutrition among these infants can be minimized, even under slum conditions, through education and a means of providing affordable, convenient, nutritious foods during this critical period of development.

Dr. S. Malhan of the [Institute of Home Economics, University of Delhi](#), was aware of the problems associated with infant feeding in low income communities in New Delhi and recognized the need for a project that would help raise the nutritional status of infants in these communities. This project was carried out by the Institute from 1991-1994. The objectives were:

1. to identify current weaning practices of a target population of an urban slum in New Delhi
2. to develop a weaning food appropriate to the nutritional needs of the infant and the specific needs of the urban slum mother living in New Delhi
3. to educate the mothers on the importance of the weaning food
4. to market the weaning food and use this concept as an opportunity to generate income for a member of the community.

The project area, Kotla Mubarakpur located in South Delhi, extends to about 1.25 square km. with a population over 65,000. 274 families from among those living in four jughhi clusters of Peer Baba, Bapu Park, Prem Nagar and New Khanna Market were randomly interviewed by students from the Institute of Home Economics. Basic demographic information was collected. The average per capita income/month was 298 rupees (\$9.61 US). Family members were daily wage earners or were engaged in semi-skilled jobs such as construction labor, office assistants or in professions involving skills such as embroidery, darning, rope making, etc. Many women worked as part time domestic workers and left their child with an older sibling who was responsible for feeding the child during the day. Food was the families' greatest expense. They generally bought food in smaller quantities according to the money in hand and their immediate requirements. Bulk buying was not prevalent as the one-room flats were not suitable for bulk storage. Fuel to prepare food was also expensive. The lack of income prevented these mothers from buying expensive, commercial infant foods at the local store and they believed that if they breast-fed infants longer, the money saved on supplemental foods could be used to feed others in the family. Therefore, our goal was to find various ingredients which would be *affordable*, yet provide additional nutritional value.

From among the 274 families, 144 women having children between the ages of four months and 30 months were interviewed to obtain specific information on infant feeding practices. In this project, 6.5% of the infants received semisolid foods before 6 months, 89.43% within nine months. and 4% within 12 months. Most of the women decided additional foods should be given to their infant. The majority started giving foods because their child seemed hungry even after being fed breast milk. Fifty percent felt that the supplementary foods were good for the baby while 27.5% were advised by someone else of the benefits of the foods for the child's health. We wanted to educate the women as to the importance of introducing supplemental/weaning foods at an appropriate age for the health of their infant. The supplemental food in this project had to be *nutritious*.

Many mothers worked outside the home doing manual labor, her infant is either carried to the worksite or left in the care of an older sibling. In addition to working outside the home, the daily household chores were numerous. Water had to be obtained from a well in the community,

food storage areas were non-existent, so food had to be purchased for the family on a daily basis. A large amount of time was spent on preparing food for the family, yet mothers spent no time preparing special/separate supplementary food for their infant. A premixed, packaged food that is easily transported and prepared would be easy to use. Therefore, the supplemental food had to be *convenient*.

Based on this information collected in interviews, weaning food recipes were developed. The best recipe which met the criteria of being highly nutritious, convenient and affordable was produced in sufficient quantities for field testing. This cereal mix was made of murmura (dried rice flakes), channa (roasted chickpeas), sugar and peanuts. To make a nutritious infant cereal the following components were considered: a basic staple, an energy-rich supplement and a protein-rich supplement. The rice flakes were the basic staple, the sugar and the oil in the peanuts provided energy and the chickpeas provided protein. All of the ingredients, purchased at the local market, were weighed out into recipe amounts, ground into a dry cereal mix and packaged in plastic bags at the Institute.

We then went to the "jugghi" (slum) to test the cereal mix at cooking demonstrations. Since many of the mothers were illiterate, posters were used to explain the various ingredients in the cereal. Instructions for preparing the cereal mix, e.g. the amount of milk or water to mix with the cereal, were explained to the mothers/caretakers. Samples of the cereal were distributed to mothers/caretakers in resealable (500 gram) plastic bags with "picture" instructions for preparation. The mothers/caretakers were asked to return the following week with the bag so we could record how much cereal the child consumed. At that time, the mothers/caretakers indicated that they would purchase it because they didn't have time to make such a mix themselves.

And so production began. More ingredients were purchased and additional cereal was produced. The cereal was packaged in two sizes, a 50 gram bag which cost 1.5 rupees and a 500 gram bag for 15 rupees. To eliminate the storage requirement, small packages enabled the women to purchase the cereal on a frequent basis. The larger bag was available to mothers needing a greater quantity.

At the onset of the project, it was decided that this would not be a food assistance/distribution project. We wanted to "turn over" the project to the community. We purchased a domestic food grinder and one woman in the community was trained to produce the cereal. She and her friends could produce and package the cereal, and use the sales from the cereal as a source of income. They would also serve as educators to their peers on the importance of introducing nutritious weaning foods at the appropriate age to their infants.

In summary, the project interviews identified the need to disseminate information to the mothers about the importance of supplemental foods at an appropriate age for their infants. The project was designed to take into consideration the many factors which affect these mothers' ability to provide nutritious weaning foods for their infants. Their lifestyle is not easy; they need time-saving conveniences. Therefore, a nutritious, convenient and economically viable

cereal mix was developed. Training sessions taught the mothers/caretakers about the ingredients, preparation, and the amounts of cereal mix to feed their infant. Production and marketing of the cereal mix by a community member served as an income generation scheme and added a valuable component to the project.

The project was low in cost. Students from the Institute of Home Economics performed the background interviews for this project. The ingredients used in the recipe for the cereal were all locally available and inexpensive. A household grinder was purchased for preparation of the cereal mix. Materials for the demonstrations included the ingredients for the cereal mix, utensils, plastic bags and paper and pens for posters. A \$300 donation from the [American Women's Association of the American Embassy in New Delhi](#) covered the expenses of the project

The project could be performed in any community where there is a need to educate mothers to the importance of supplemental foods for their infants. The development of a weaning food would require formulating recipes and analyzing their nutrient composition, and packaging considerations. Training sessions and cooking demonstrations could be devised to provide mothers and caretakers with information on the importance of supplemental foods at the appropriate age, the type of food that should be given and the amounts and frequency for feeding their infant. The project could serve as an income generation opportunity for members of the community thereby increasing their financial security. But the greatest impact would be to help safeguard the nutritional status of infants during the first year of life and alleviate protein-energy malnutrition among children in low income communities. Children deserve such efforts in the field of nutrition to help them have a healthy start in life.

**2008**

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**Given the opportunity, communities can improve on their lives: The Ghana Experience**

*By: Rosanna Agble*

It was a bright sunny day and I joined other Community nutrition project team members to undertake a two hour journey to Komenda/ Edina/Eguafo/Abirim district of the Central region of Ghana to participate in a review meeting involving ten communities. As we got closer to our destination, we observed school children chattering excitedly and following our four wheel drive vehicle and it was obvious that not too many of these types of vehicles visit such communities often. The excitement reached its climax when we arrived at the venue where we observed the district level policy makers including the District Chief Executive, the Presiding member of the District Assembly as well as traditional rulers clad in their rich Ghanaian attire and ornaments (normally reserved for visiting dignitaries) and accompanied by community members had gathered in the village square.

As typical of Ghanaian communities, women's groups had composed various songs and were supported with drumming by the men in the community. We were all drawn into an exciting traditional dance and realized that the words of the songs were messages on child care activities featuring the importance of breastfeeding, complementary feeding, family planning, and of monitoring child growth. After all the welcome pleasantries, the event for the day started.

Komenda/ Edina/Eguafo/Abirim district is one of four districts out of the total of one hundred and thirty in the country selected to benefit from a Community Based Nutrition and Food Security Project which formed part of a Community Poverty Reduction Strategy of the Government of Ghana and supported with funding from the [World Bank](#). The project was designed to increase the awareness of the communities about the effects malnutrition and its control through improving their household food security, strengthening their capacity to identify and take appropriate action to address the determinants of malnutrition, improving child care-giving practices especially quality and quantity of food intake of children at home and through these activities eventually reducing the incidence of underweight among children under five. Prior to the start of the project activities, the regional and district personnel had undergone preparatory activities involving advocacy and consensus building among agriculture, health and other stakeholders which enabled them develop common strategies to link nutrition and agriculture. This was followed by the selection of community volunteers by the community leaders, training of the volunteers on community growth promotion activities and essential nutrition actions, selection of twenty households in each community for training in agriculture activities covering pineapple and vegetable gardening, fruit tree planting in the communities, small ruminants/snail rearing, poultry keeping, and mushroom cultivation. In addition, women groups had the opportunity to access credit to either start or expand on their economic activities.

The volunteers organized monthly Growth Promotion sessions-under the supervision of sub-district health staff-for children under five during which other associated health activities based on Essential Nutrition Actions (including breast feeding, complementary feeding, Vitamin A supplementation, use of iodized salt, family planning, immunization and use of insecticide treated bednets) were emphasized

The volunteers also conducted follow-up visits to the homes of children who do not show adequate improvement in growth. With the support of the sub-district health staff, meetings are held after each monthly session with the Community Implementation Committees during which the performance of the participating children are shared. The leaders then discuss and agree to some of the support activities they would undertake to contribute to improvement of the growth of the children.

Agriculture extension officers also gave technical support for community and backyard gardens. In addition, women had the opportunity to access credit to either start or expand on their economic activities.

The climax of the day's activities was the presentation of the achievements of the participating communities. Following two years of implementation of the project activities, 1803 children aged two to five years, had been registered in the ten communities out of which 66-81% of them attended Growth Promotion sessions regularly; 85-100% of caregivers were practicing exclusive breastfeeding; all children that participate in the growth monitoring sessions were fully immunized at the prescribed ages; fever and diarrhea had reduced remarkably and various agricultural activities were flourishing in the communities.

In addition, 391 caregivers in the ten communities had accessed loans of between 300,000-500,000 Cedis (US\$33-US\$55) for income generation activities.

As a result of all these activities, underweight had reduced from 26% at baseline to 15% in the zero to two year group and from 47.2-36% in the two to five year age group.

The traditional touch was very prominent in the meeting with drumming and dancing to celebrate the achievements of the communities. As motivation to the hard working communities and volunteers the district assembly gave rewards to the best performing community, the best growth promotion volunteer and the household with the best backyard garden. Even though a challenge such as access to potable water is still to be resolved, there was satisfaction among the communities that they had helped to improve the condition of children in their communities. The project has indicated that given the opportunity and necessary support, communities are able safeguard the nutritional status of their children.

This was adequately summed up by a supervisor of the project in the following words:

- "Classroom knowledge alone is not sufficient for the effective and efficient performance of the Growth Promoters and Community Implementation Committees. Most of the

Growth Promoters who were selected with little or no educational background are performing very well. They exhibit high levels of commitment and dedication to the work they do. They have learnt very fast and very well. Roles and responsibilities have been assigned in such a way that those who cannot read and write very well do the weighing and counseling and the others do the recording...

As we left the meeting with more traditional music and dancing in the background, and drove past many communities that have not had the opportunity to benefit from such projects, we could not help but recall some of the comments passed by the review participants (quoted below) and wondered how long it would take to expand such community based programmes to improve the lot of many other communities in similar need."

- *"Now we don't have to walk long distances — sometimes in the sun and rain — anymore to attend child welfare clinic. Thanks to the project."*
- *"The children are not visiting the clinic because they do not fall sick now"*
- *"We feel more free at sessions because the growth promoters are our own brothers and sisters"*
- *"I saw the growth promoters at work and I loved it"*

2009

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## Fund for International Exchange in Nutrition: Developing and Sustaining School Breakfast Programs in Jamaica

By: Patricia Thompson MS, RdN, SNS

Between 1998-2005, I worked on a project in Jamaica sponsored by the [United States Agency for International Development \(USAID\)](#) that confirmed that regular balanced breakfasts for school children resulted in improved attendance and academic performance. The project also linked breakfasts to stimulating community involvement and development, reduced aggression in students and initiation of income generating enterprises including school farms and soup kitchens. The main objective of the breakfast programs however was to solve the problem of short term or transient hunger in elementary school children.

Data on hunger and poverty in the Caribbean region indicate that enough food is already available for all but the main problem is having adequate access to this food. Jamaican data show that since the 1970s, supply has exceeded population goals for energy and protein and that accessibility is more of a problem than the actual availability. Accessibility is defined as the ability of persons to actually obtain the available food and resources and lack of access results in hunger and malnutrition. Many of the hungry in Jamaica are school children who attend school without breakfast because of poverty or lack of adult supervision. Baseline data on the above project indicated that 40% of students in the project schools attended school without breakfast and 7% were underweight although there was creeping overweight in 3% of the same cohort. Following a regular breakfast, attendance increased by 21%, nutritional status by 5% and academic performance improved by 12% to over 100% in individual cases.

Since the end of the project, I have been challenged to sustain these programs without any source of funding since Government's support for lunch programs did not extend to breakfast. Needs assessment investigations revealed that while efforts to sustain breakfast programs in schools would be welcome, Government financial support would not be considered feasible in the near future. I proposed a model known as the 'Triple PS Plan' which promotes support from past students of target schools (especially in the diaspora), parents of students and the private sector. Through the initiation and hosting of a Diaspora Conference in Jamaica by the Foreign Ministry, I have met possible supporters from the USA and Europe who would be willing to give financial support to schools through an entity that could provide sustainability of such programs and feedback with documented results. I have also approached a large food distribution company in Jamaica, and generated some interest but they were concerned as to how this would benefit their profit margin. I also used the personal approach to individual business persons and this has met with more success so that individual schools are now sponsored. Fundraising efforts in collaboration with the [Jamaica Association of Professionals in Nutrition and Dietetics \(JAPINAD\)](#) have yielded sponsorship to another two schools and there is also interest from the National PTA Association with links to an entity named "[Food for the Poor](#)", that receives donations of food from the USA. The further challenge then, was how to get my ideas implemented in a sustainable way to satisfy all the above criteria.

## Collaborations and Outcomes

I found guidance and encouragement through the [Global Child Nutrition Forum \(GCNF\)](#). In July 2005, I represented my regional professional association, the Caribbean Association of Nutritionists and Dietitians (CANDi), to the GCNF in Baltimore, USA, an international conference on school feeding hosted jointly by the [School Nutrition Association \(SNA\)](#) and the [World Food Program \(WFP\)](#). This collaboration has continued and the relationships formed have assisted me greatly in formulating my current approach to implementing sustainable breakfast programs in Jamaica. The Forum meets annually and in 2007, I served as one of three international representatives to the Forum which focused on assisting the regions of Africa and Latin America.

The goal of the GCNF is to bring together representatives from countries worldwide who are involved in school feeding, to exchange experiences and strategies towards solving the problem of world hunger and especially that of school children. Participants share technical knowledge, best practices, problem solving, funding strategies and other aspects of creating and maintaining successful programs. The operating values are collaboration and empowerment and the outcome objective is to maximize the replication of effective sustainable feeding programs, tailored to a wide array of settings and situations throughout the world. Since first attending in 2005, we maintain contact by email throughout the year sharing our successes and challenges and making suggestions to each other for improvement and overcoming obstacles.

At the GCNF, I met representatives of the ["Breakfast for Learning" program in Canada](#) and was invited to visit with them in Ottawa in October 2006 to observe the workings of their model. There was a national breakfast program that did not receive Federal Government support but was instead funded through partnerships with the private sector. The 'reach' to schools was implemented by volunteers, some of whom were dietitians and nutritionists who would make the linkages, and oversee the smooth running of the program at the local levels. The coordinating entity was run as a 'Foundation' set up by a single private sector company.

Through the GCNF, I have also attended the [Legislative Action Congress \(LAC\) of the SNA](#) in Washington, DC, to study how they influence Government Policy. There, I met with representatives of the [United States Department of Agriculture \(USDA\)](#) and learnt of their procurement and distribution systems. This revealed a different approach to the relationships established with the private sector that would satisfy the concern of our private sector partner as to how their profit margin would be enhanced. A spin off from the GCNF is a regional group known as the [Latin American School Feeding Network \(LARAE\)](#) with membership throughout South and Central America and the Caribbean. I attended their regional conference in Recife, Brazil, in October 2007 and this revealed more clearly how the community approach was developed and its linkages to agricultural and community development through the Brazilian Federal Policy on "FOME ZERO" or Zero Hunger.

I further coordinated a Caribbean regional conference on school feeding in Jamaica in 2007 on behalf of the CANDi and this provided the opportunity to share various models existing in the region with Caribbean colleagues from various sectors especially looking at successful school

feeding programs in Trinidad, Antigua and Barbados. These countries use different approaches, with Trinidad applying a decentralized contractual arrangement with food providers while Barbados and Antigua use a more centralized approach but with an agricultural component in Antigua.

## **Implementing Lessons Learnt**

Armed with the lessons learnt from all these experiences, I have endeavored to scale up my program in Jamaica to the next level. Despite the successes, the approach of financing schools singly and for limited periods is not sustainable or effective in the long term. I am therefore in the process of registering a non-governmental organization (NGO) to lead a coordinated approach to breakfast feeding programs in Jamaica.

This entity will be able to generate a steady income flow to support a Secretariat, from establishing a distribution network among interested parties for the sale of educational material to schools and from training activities and consultancy work. Donor funds from the diaspora and funding agencies will assist in program development and implementation as we seek to institutionalize a structure of resource personnel for sustainability.

Drawing on the Canadian model, the program will involve a network of volunteers who currently work as nutritionists and dietitians, home economists in agricultural extension from the Rural Agricultural Development Agency (RADA) and the 4H Clubs. The latter two organizations are responsible for implementing school gardens and we will endeavor to have these outputs linked to standardized menus. Implementation of menus and inventory control will be monitored by community and school volunteers who will oversee the running of these programs utilizing the community approach. The Brazilian model illustrated how this could be done through social participation and social control. Modeling their inter-sectoral approach, food sales from small farmers will not only service the school children but also ensure a reliable income to improve the standard of living of poor families and this will be linked to community development strategies through the [Social Development Commission in Jamaica](#). Using the USDA model of procurement and distribution, we will initiate partnerships with Government and the private sector for purchasing of farming commodities as well as product gluts from school gardens to be processed by companies into marketable products for distribution to schools, again based on menu requirements.

The NGO will provide the necessary training through the nutrition and dietetics professionals of JAPINAD. Food preparation in schools will follow the conventional approach with manpower provided by the parents and guardians of the students and utilizing existing infrastructure and equipment. Schools will decide whether they can afford contractual arrangements with the parents or whether they will seek volunteer assistance. Schools will need to use their own initiative to upgrade facilities in order to qualify for food and monetary grants.

## **Conclusion**

When I first attended the GCNF in 2005, although I knew what I wanted to achieve, I had no notion where to begin. Despite my commitment to implementing sustainable breakfast programs in Jamaica, the roadblocks often sap my enthusiasm and I sometimes feel to give up. Belonging to a global network of people who are passionate about reducing child hunger and who are willing to work together to achieve this goal, I can always garner support and encouragement from my colleagues and friends in over 30 countries worldwide.