

## MEMORANDUM

TO: Dr. Osman Galal

FROM: Barry M. Popkin, Chair  
Carlos Monteiro, Vice Chair

DATE: 24 July 2007

RE: Report on Activities of the Task Force on the Nutrition in Transition

Overall, the Committee had planned to proceed and develop a Bellagio Conference in 2009 but we have decided to pull back on that and work toward a much more integrative and creative agenda of papers and foci. We put on hold all the work the committee undertook for the next Bellagio meeting.

First we have worked to integrate our new members into the committee. Barry visited them to meet with them and their colleagues and discuss ways of pushing forward research and work on this.

Second we have worked to develop cross-fertilization between our countries and member. Carlos Monteiro and Barry are both working with Juan Rivera separately on program and policy initiatives. We are working to build other linkages as well.

Third, there is a large need for us to identify new young scholars working in this area. Aside from extensive activity in Mexico, Brazil, the Netherlands, and the US we have no identified new hubs of activity and excellence. We are working on this area of concern.

Committee activities June 2006 to June 2007

The committee has been very active in a number of countries in pushing forward research and programmatic work in this area but has not undertaken any coordinated cross-national effort during this period. We try to highlight a few of the key initiatives underway linked with our key focal countries and committee members.

**Brazil:** Carlos Monteiro lead the Brazilian task force that analyzed the most recent national food and nutrition survey conducted in Brazil in 2002/2003 on a random sample of 48 thousand families. This task force was integrated by researchers and representatives of the MoH and IBGE

(the federal office for official statistics in Brazil). The publication of the main survey findings (available from the IBGE site under the title: Pesquisa de Orcamento Familiar 2002/2003) updated the nutrition transition showing increasing obesity rates in the country, particularly in the poorest regions and families, and a shifting of the diet towards increasing fat content, increasing saturated fat content and increasing sugary, salty, processed foods with no changes in the low consumption of fruits and vegetables. This publication had enormous repercussions in the nutrition community and also in the national media, particularly in light of the strong emphasis placed by the federal government on “anti-hunger” measures (Fome Zero program). Carlos also acted as a consultant for the WHO/FAO fruits and vegetables initiative participating in technical meetings in Geneva and Kobe that discussed and proposed ways to implement the initiative in developing countries. In Brazil, Carlos is assisting the federal government and selected municipalities in the implementation of the fruits and vegetable initiative. A recent community trial conducted by Carlos and his group at the University of São Paulo in a poor, underserved area of São Paulo city provided evidence that feasible actions combining education and improvements in the supply of fruits and vegetables can increase significantly the consumption of these foods by low income families. A large-scale replication of the intervention is being planned for the near future. Carlos and his group also engaged in a project to build in Brazil a surveillance system on behavioral risk factors for chronic diseases similar to the BRFSS existing in the USA and with a greater focus on diet and physical activity patterns. The system was tested first in Sao Paulo city, then in other five big Brazilian cities and presently is working in 27 big cities (all state capitals and the Federal District of Brasilia). Another important activity is the support Carlos and his group are giving to the Ministry of Health to implement a national code to regulate the advertisement of unhealthy processed foods (those with excessive content of salt, sugar, saturated and trans fat). Finally, Carlos and his group are engaged in the task force created by PAHO to implement the initiative “Americas Free of Trans Fats”.

**Mexico:** Juan Rivera has led a major initiative to focus a great deal more work on noncommunicable diseases and related risk factors in Mexico.

1. They conducted an analysis of the 2006 Mexican Nutrition Survey which used cluster analysis to identify different dietary patterns. They further studied the association of the dietary patterns with NCD risk factors. This survey includes a random sample of 40,000 households. They will use comparable methodology to the first (1988) and the second (1999) national nutrition surveys, which will allow the study of trends in diet and in under and overnutrition and chronic diseases in the Mexican population.
2. Barry Popkin, Juan Rivera, and a number of younger scholars at INSP are involved in a series of papers that will lead to a Mexican beverage guidelines. Part of this is meeting and working directly with the Minister and Deputy Minister of Health to implement policy changes in Mexico related to caloric beverages. As part of this work, the Minister of Health will work with the government to institute new laws and regulations concerning beverage consumption and added sugar consumption in Mexico.
3. They are studying the prevalence of NCD risk factors such as blood lipids, glucose, and insulin in a probabilistic sample of adolescent and adult Mexicans studied in 2000. They are

analyzing the nature of the association of the risk factors with BMI and other anthropometric indices. We have these articles accepted to be published this year:

Barquera S, Carrión MC, Campos I, Espinoza J, Rivera JA, and Olaiz G. Methodology of the fasting sub-sample from the Mexican Health Survey, 2000. *Salud Pub Mex* (in press).

Barquera S, Flores M, Olaiz G, Monterrubio E, Villalpando S, González C, Rivera J, Sepúlveda J. Dyslipidemias and obesity in Mexico. *Salud Pub Mex* (in press).

Flores ME, Barquera S, Carrión MC, Rojas R, Villalpando S, Olaiz G, González-Villalpando C. C-reactive protein concentrations in Mexican men and women: High prevalence of a cardiovascular risk factor. National Health Survey 2000. *Salud Pub Mex* (in press).

Villalpando S, Carrión MC, Barquera S, Olaiz G, Robledo R. Body mass index associated with hyperglycemia and alterations of components of metabolic syndrome in Mexican adolescents. *Salud Pub Mex* (in press).

Sánchez-Viveros S, Barquera S, Medina-Solis C, Velázquez-Alva MC, Valdez R. Association between diabetes mellitus and hypertension with anthropometric indicators in older adults: Results of the Mexican Health Survey, 2000. *Journal of Nutrition Health and Aging* (in press).

Lozada AL, Flores M, Rodríguez S, Barquera S. Dietary patterns in Mexican adolescents women: A comparison of two analysis methods. National Health Survey 1999. *Salud Pub Mex* (in press).

4. They are participating in a project organized by the FAO Food and Nutrition Division entitled "Assessment of Dietary Changes and their Health Implications in Countries facing the 'double burden' of malnutrition". They are in charge of preparing a document describing the situation and the trends in Mexico using data from several cross sectional surveys on food purchases, diet, anthropometry, chronic diseases and mortality. From the previous analysis they published a chapter of a FAO report in 2006:

Barquera S, Hotz C, Rivera J, Tolentino L, Espinoza J, Campos I and Shamah T. Food consumption, food expenditure, anthropometric status and nutrition related diseases in Mexico. In: Kennedy G, Nantel G, et al (eds). Double burden of malnutrition in developing countries. Food and Agricultural Organization (FAO) / United Nations, Rome (2006). pp. 161-204

5. They are conducting the evaluation of a poverty alleviation program which provides cash transfers as well as nutrition and health services to 5 million low income families in Mexico. Cash transfers are used as incentives for investment in nutrition, health, and education. They are studying the effects of the program on food intakes, body weight and composition, and chronic diseases.

6. They developed a proposal that selected for funding by ILSI/PAHO/CDC. The project studied the elements in the environment of public schools that promote overweight. With the use of formative research, interventions aimed at changing the environment to promote physical activity and a healthful diet for the prevention of obesity in children were developed and their effects are currently tested and evaluated with an experimental design. Currently the study is collecting impact data from the interventions that were implemented during one school cycle in 26 schools of Mexico City. The results of this study will be part of the evidence based practices to prevent childhood obesity. The revised strategies from this study will be implemented and evaluated for another school period 2007-08.

7. The Global Opportunity Fund from the UK Embassy in Mexico provided 30,000 pounds in order to strength the institutional capacity of the Mexican authorities and the INSP in the area of childhood obesity prevention. The mentioned funds were used to organize a Mexico-UK expert workshop in Cuernavaca Mexico and discuss the technical aspects of the interventions implemented in the OPS/ILSI study. One the key results was the identification of policy needs in the country in to prevent obesity. As conclusion of the workshop a collaborative agreement between and Mexico experts was established. Recently two researchers from INSP went to UK to learn the British experience in Food labeling, Marketing code addressed to children, School Dietary Guidelines and some dietary methodologies in children. A policy needs paper will be written by Mexico and UK experts

8. They received funding from the National Council of Technology in Mexico and the University of California to develop 3 studies:

- Effects on migration and money transfers on diet physical activity and obesity in Mexican school age children.
- Development of an intervention to prevent obesity among Mexican children in Cuernavaca, Chicago and San Francisco.
- Development of an intervention to promote adherence in obese adults with diabetes, dyslipidemias or high blood pressure.

9. They have created, in collaboration with INTA (Chile) a network of research centers in nutrition in LA with support from UNU/IUNS. The two main Institutions are INTA Chile and INSP Mexico. Fernando Vio (INTA Director) and Juan Rivera are the regional coordinators of the UNU Nutrition Program in LA. The first activity involved a diagnosis of the main nutrition problems and an inventory of research institutions in nutrition, their capacity and their publications conducted in 8 LA countries. As a result of the diagnosis, research priorities were identified and working groups created. Each working group is developing multicenter proposals that will be sent to donors. One major group addresses obesity and chronic diseases. One of the projects is work with Industry in LA to reduce or eliminate trans fatty acids. We have another group dealing with childhood obesity. Each group involves investigators from INTA, INSP and other research institutions in the region.

10. They have created awareness about the childhood obesity situation in Mexico at all levels. Juan Rivera has been asked by the Deputy Minister of Health to lead the childhood obesity prevention efforts. There have been some meeting with the senate and House of Representatives who are convinced to create public policies to prevent childhood obesity. Such policies are aimed to promote healthy lifestyles in children and adult populations.

11. Simón Barquera and Juan rivera have been collaborating in the development of a model to prevent, detect, and control NCCDs as members of a ministry of Health task force. This model will be implemented as a pilot in 200 clinics across the Country. This initiative was announced by the president in June as one of the top priorities of his government

12. Simón Barquera is working with Barry Popkin and others to create a longitudinal panel in mexico to study NCD's linked with diet, physical activity and obesity.

**Geoffrey Cannon:** He has led a worldwide group focused on creating a newer broader vision of nutrition. In addition, he is playing a major role with the World Cancer Research Federation in reviewing diet and cancer relationships within the context of the dynamic worldwide shift in stages of the Nutrition Transition. This Panel has Juan Rivera, a task force member, on it.

**United States:** Barry Popkin is leading a group of scholars to develop a beverage guidance system for the US. Given the very high percentage of calories from beverages in the US (over 21%), this is viewed as a key way to continue to fight the obesity increases in that country. Barry Popkin has also presented aspects of the Nutrition Transition at a plenary talk as part of the Sixth International Conference on Preventive Cardiology Iguaçu, Brazil. He also created and received funding for an NIH Roadmap Center on Obesity that features a large component on the nutrition transition and involves 71 faculty members from over 35 departments and six schools on the UNC campus as well as other institutions in the region.

## **China**

A post-reform China in the new millennium faces a range of challenges in health, nutrition, and family planning. Income disparities have increased as coastal areas have become more wealthy, while the 300 poorest counties—most of them in western China—suffer stagnation. The aging of the population and increased life expectancy have contributed to an inevitable increase in the demand for long-term care. Three main data sources can be used to analyze the trends in diet, nutritional status, and disease burden in the Chinese population.

Dr. Zhai Fengying is taking the lead to develop a new set of Nutrition Laws for China to address the new nutrition-related noncommunicable diseases. She will be leading a team to visit Brazil, Mexico and other countries. She will also use the following sets of data for their team:

The primary source of data on dietary intake is the China Economic, Population, Nutrition and Health Survey (CHNS), which was conducted in 1989, 1991, 1993, 1997, 2000, 2004 and 2006. The project collaborated with the University of North Carolina. The CHNS included nine provinces that vary substantially in geography, economic development, public resources, and

health indicators. A multistage, random cluster sample was used to draw the sample surveyed in each of the provinces. There are about 3,800 households in the overall survey, covering 16,000 individuals, including all age groups.

Another dietary intake survey—the National Nutrition Survey (NNS)—was conducted in 1992 and 2002. The third National Nutrition Survey (NNS) of China was conducted in 1992 and the fourth was conducted in 2002. In 1992, A stratified multi-stage cluster random sampling method was used. The survey covered the residents of sample units selected from 30 provinces. The sample size was 32 sites including 960 households for each province, metropolis, and autonomous region. There were some adjustments in a few provinces to provide a total sample of 28,000 households in 30 provinces. In 2002, A stratified multi-stage cluster random sampling method was adopted, which sampled 71,971 households (24,034 urban households and 47,937 rural households) chosen from 132 counties of China's 31 provinces, autonomous regions, and municipalities directly under the Central Government.

The last of the data sources for this report is the China Disease Surveillance System. The system of China Disease Surveillance was established in 1989. A multistage, randomized cluster process was used to draw the sample. The first layer was based on geographic representation, the second on urban and rural areas, and the third on economic and development levels and demographics. The population in the surveillance was 10,000,000, about 1 percent of China's population.

**South Africa:** With two very active committee members and nutrition viewed as a major concern by the government, Committee members have been most active there. South Africa is a country in transition, experiencing a quadruple burden of disease and the coexistence of both under-and overnutrition often within the same communities, and even within households.

The nutrition transition has been an integral focus of the Food-Based Dietary Guideline process in SA (initiated by Este Vorster in 1997). Since both the coexistence of under-and over-nutrition as well as changes/shifts in dietary intake with development and urbanization from local evidence has been incorporated. Primordial prevention of diseases of lifestyle (e.g., specific attention to intakes of types of fats, legumes and fruit and vegetables and physical activity are incorporated in the health messages). The South African Department of Health officially approved the FBDGs (comprising 11 Guidelines) in 2003, and the professional and national launches took place in 2004. Lesley Bourne was part of the core working group throughout this period and was tasked with/convened the Pediatric FBDGs (PFBDGs ages 0 - 7years). As with the core process all steps outlined in FAO/WHO have been followed and the database is extensive. The Preliminary guidelines are being consumer-tested by postgraduate students (some of which has been published), and future testing is planned A special issue of Maternal and Child Nutrition outlining and motivating the scientific basis for the preliminary guidelines will be published later in 2007.

Another major issue is the South African leg of the PURE study, in which the health transition of Africans (urban and rural) is monitored over 12 years. Part of this study also monitors the nutrition transition. Este Vorster's group is handling this.

The South African group has had a great deal to do with the ICN. Dr. Vorster has played a lead role as has Dr. Bourne. The latter has organized the Focus Asia symposium.

A third major issue relates to the linkage of HIV/AIDS and nutrition. It has become a major issue in South Africa.

**Thailand:** One major effort was the organization and implementation of the Thai National Food Consumption Survey. A second has been the development in Thailand of a coordinated research agenda on the nutrition transition and cardiovascular disease. There are several agencies involved including national research council, Thailand research fund as well as the National Health

Foundation. Dr. Vongsvat was central to the organization of this as it relates nutrition to CVD and diabetes. One initiative coming out of this is a large research effort she will lead on the Thai Muslim population related to the identification of the environmental contributing factors of noncommunicable diseases.

**Morocco:** Sabah Benjelloun wrote a policy paper for the General Council of Agriculture. Based on the analysis of various data including the national budget and consumption survey of 2001 and on collected data on the recent development of food industry and commerce in the country, the paper makes the case for the on-going nutrition transition in Morocco. It concludes on a set of practical recommendations for diverse sectors (agriculture, industry, distribution, education, urban planning, media and sports). It is likely that these recommendations will be considered at high decision making levels in Morocco and hence the advocacy for nutrition is underway but the remaining work is tremendous.

In parallel, the promotion of traditional Moroccan diet, especially its Mediterranean aspects, is taking place even if slowly and in resistance to the imported western consumption model. The combat is in diverse sectors including education, media and on the market place. For example, restaurants offering traditional Moroccan cuisine are growing in number.

There is also a joint Moroccan-Dutch study on Moroccan women immigrants in the Netherlands.

### **The Netherlands**

Colleen Doak has been working at the Institute for Health Sciences (IHS) at the Vrije Universiteit Amsterdam since 2003 and is collaborating closely with Este Vorster's group in (Potchefstroom) South Africa and with Noel Solomon's group (Cessiam) in Guatemala on nutrition transition related topics. She is collaborating closely with Mary Nicolaou, the PhD student involved in the joint Moroccan-Dutch study together with Sabah Benjelloun. In addition to the above collaborations she is also participating in a project to map the development of overweight and obesity in Europe, is writing a systematic review of overweight/obesity prevention, and is supervising research projects by MSc interns to document the nutrition

transition using existing data from South Africa, India, Ethiopia, Indonesia, and China (CHNS).

The Vrije Universiteit Amsterdam was established the IHS (Institute for Health Sciences) in 2003. The institute, directed by Jaap Seidell and has a strong multi-disciplinary focus in the area of overweight/obesity and non-communicable chronic disease prevention. Through Jaap Seidell, as well as other faculty, the institute linked to the Vrije Universiteit EMGO Institute Research Program '*Diabetes and Overweight*', the Dutch *Knowledge Center Overweight*, the *Research Center for the Prevention of Overweight*, Zwolle (established in 2005), and *Choices International Foundation* which uses scientific criteria to label foods that adhere to international nutrition guidelines. In addition to the above initiatives, new nation-wide interventions are being planned by Ingrid Steenhuis, also from the IHS. The first will be a study of portion size and pricing at worksite cafeterias and the second will study pricing strategies to promote a healthy diet, in low- income populations. Both will provide insights into macro-level changes for prevention of overweight and obesity and promoting fruit and vegetable consumption.

**In addition to the above projects** the Dutch government ministry of health has developed a agreements with industry called to help in the prevention of overweight/obesity. An English language translation can be found at:

[http://www.convenantovergewicht.nl/assets/Image/convenant\\_eng1v1.pdf](http://www.convenantovergewicht.nl/assets/Image/convenant_eng1v1.pdf)



Attachment A: Members of the International Union for Nutritional Sciences

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