Evaluation of the Growth Monitoring and Promotion Component of the Integrated Care for Children and Women at the Community Level (AIEPI AINM-C)

In Guatemala, like in other countries in the Central American region there is an interest to offer better access to quality health care services to the population. This has motivated the implementation of specific models, especially in areas were health and nutrition problems and unfavorable socioeconomic conditions are concentrated. In 1997, the Ministry of Health (MOH) in Guatemala started implementing the Extension of Coverage Program through which local non-government organizations (NGOs) are hired by the Ministry to provide a basic health care package consisting of maternal and child care, attention in case of emergencies and sanitation. The Extension of Coverage Program currently provides services to approximately four million inhabitants of rural communities through 96 NGOs.

In 2002, the Guatemalan Ministry of Health adopted Integrated Care for Children and Women at the Community Level (AINM-C). The AINM-C strategy expanded on the integrated community child health approach (AIN) implemented in other Central American countries notably Honduras by combining it with community integrated management of childhood illness, maternal and neonatal health, and family planning. The growth monitoring and promotion component in AINM-C aims to strengthen community outreach activities under the extension of coverage program. Growth monitoring and promotion (GMP) of children less than two years is seen as the key intervention to deliver counseling on exclusive breastfeeding and complementary feeding, hygiene and other health messages to mothers through counseling, group talks, demonstrations and follow-up home visits.

The model of the intervention is the improvement in children's nutritional status through the promotion of changes in the knowledge and practices of mothers and caretakers of these children by community health workers who have been trained and, therefore, have themselves new knowledge and counseling skills.

Generally, there are few incentives and too many obstacles to conduct good evaluations of the impact of social, health and nutrition programs implemented. In our case, a baseline assessment was not undertaken prior to the beginning of the implementation of AINM-C because the Ministry of Health did not want to spend resource in what was considered research. Therefore, it was not until last year that this process evaluation was...
designed and conducted. The main objective was to examine the effects of growth monitoring and promotion on selected knowledge and practices of mothers and the nutritional status of children participating in the program as compared to those not participating in it. Specifically, we attempted to describe the process and quality of implementation of AINM-C in intervention communities; evaluate selected knowledge and practices of mothers participating in the program; and determine the nutritional status of all children less than 5 years of age participating and not participating in the program.

Materials and Methods
As can be expected the main difficulty in the design was the lack of a baseline. An additional difficulty was posed by a new intervention occurring in most of the Extension of Coverage areas. In 2006, a food supplement (Vitacereal) started to be provided for children 6 to 36 months, pregnant women and lactating mothers. This added intervention has the potential to obscure even more the effects of the original growth monitoring and promotion intervention independent from food supplementation.

Therefore, for this evaluation, communities with AINM-C but not receiving Vitacereal were selected in the intervention group and comparison communities (whose similarity to intervention communities was initially established by examining general socioeconomic indicators) without interventions were selected in the comparison group. Predictably this limited the pool of communities that could be selected for evaluation.

In each group, intervention and comparison more than 600 mothers with children less than 2 years were selected. This allowed for having at least 150 children in each category of age: 0-6 months; 6-11 months and 12-23 months.

Had we had more resources we could have had a more interesting design including another intervention group with both AINM-C and the Vitacereal intervention.

The evaluation used both qualitative and quantitative methodology. The qualitative component explored the level of implementation of the intervention as well as training and performance of community health workers in growth monitoring and counseling. The quantitative component consisted of a survey of mothers of children less than two years of age in the intervention and the comparison groups. The survey also included anthropometric measurements of all children under five in the households. A total of 1,351 mothers with children under 2 years were interviewed.

As mentioned, limitations posed by the type of design used were considered from the beginning.

Results
Comparability of the groups
Not unexpectedly, there were several significant differences between comparison and intervention groups in several socioeconomic variables, making the groups not altogether comparable. In the intervention group:

- More respondents classified themselves as Mayan Indians (78% vs. 68.8%)
- Respondents had less schooling (64.6% vs. 72.3% ever went to school)
- They cooked more on the floor (19.9% vs. 7.7%)
- Had no electricity (37.3% vs. 19.7%)
- Had no tap water from public source (35.4% vs. 19.9%)
- Had a dirt floor in their house (63.5% vs. 43%)

The Extension of Coverage program and the AINM-C strategy have been focalized on the poorest groups of population and in Guatemala this means population with these characteristics. The differences between groups imply that results have to be interpreted with caution and that follow-up measures are recommended.

Utilization of Preventive Services
One of the most interesting results was the distinct use of primary health services in the intervention and
comparison groups. Significantly more mothers in the intervention than in comparison group could show to the interviewer the child’s health card, reported to take the child to growth monitoring and promotion sessions in the community, had records of monthly weighing in the last two months, reported that the child was weighed in the community center or at other locale in the community and was weighed by a community health worker (CHW), also a third of the mothers reported that they had been visited by a CHW in the last month. However, more mothers in the comparison than in the intervention group reported using a family planning method.

No significant differences between children in both groups were found in morbidity with diarrhea and respiratory infections in the last two weeks.

Knowledge and practices of mothers
In terms of the knowledge and practices of mothers it was found that more mothers in the intervention group give exclusive breastfeeding to infants under 6 months (48.8% vs. 34.3%), the median duration of exclusive breast feeding is longer in the intervention group than in the comparison group; and the intervention mothers make less use of a feeding bottle (35.8% vs. 49.4%). In addition, fewer mothers in the intervention than in the comparison group give foods before 6 months and the diet of infants 6-11 months in the intervention group appears to be more varied than that in the comparison group.

There were no other significant differences in knowledge and practices between the groups.

Knowledge and performance of CHWs
The knowledge and performance of community health workers were found very deficient. For instance, regarding their weighing technique they hang the Salter balance at an appropriate height and read the weight when the child is still, but very few of them calibrate the balance before weighing or undress the child as much as possible, two steps that are critical for the quality of the data.

The performance of the community health workers registration and classification of weight is also very poor. Counseling was also found to be very weak. In general, the weight information in under twos if it is registered by CHWs it is not used to classify growth of the child, explain the mother the situation found, provide counseling and make a commitment with her about what she has to do in this situation.

Even when health vigilantes reported that they had been trained, their knowledge in relation to breastfeeding and complementary feeding were found wanting.

The evaluation also showed the gaps regarding the information system, from the lack of CHWs notebooks to summarize the data at the community sector level.

Nutritional status
Differences were found in child nutritional status indicators in favor of the comparison group. Significantly higher prevalence of chronic malnutrition was found in children 0 to 11 months and in children 36 to 47 months in the intervention than in the control group. Differences in the complete under five group were statistically significant for height-for-age and weight-for-age and in favor of the control group children. High prevalence of global malnutrition (not shown) was found in children 12 to 23 months.

As expected, chronic malnutrition was found related to socioeconomic (SES) indicators. However, differences in chronic malnutrition between groups persisted even for selected indicators of higher socioeconomic status, such as being non-Mayan, having a separate kitchen, safe water, sanitation, and floor other than dirt. Most of these differences were not significant for indicators of lower SES indicators except that of ethnic group.

Chronic malnutrition was also found related to maternal practices such as mother recognizes general and specific
danger signs, mother takes the child to monthly monitoring session, mother can show child card, which were combined in an index and classified as high and low.

Multiple regression analysis was used to find the independent effect of each variable and to control for those associated with nutritional indicators. In children less than two years of age factors significantly predictive of chronic malnutrition are the age (older children more than younger) and sex (boys more than girls) of the child, ethnic group (Mayan more than Ladino) and building material of walls. In all children less than 5 significant determinants of chronic malnutrition are also age and sex of the child, ethnic group, building material of walls and type of floor. After controlling for these variables, differences in nutritional indicators between intervention and comparison groups remained significant.

Conclusions
In the absence of baseline data these results need to be interpreted with caution. Differences found can be due to good focalization of the Extension of Coverage Program and AINM-C intervention and not to the lack of a real impact of the activities of the program. In addition, chronic malnutrition starts during pregnancy so that interventions might need to affect at least one generation before they are observable. On the other hand, evaluations of similar ongoing interventions in Guatemala (Creciendo Bien and Vitacereal) show that up to now growth monitoring and promotion as it is presently conducted—that is, without sufficient counseling—is not being as effective as hoped for.

However, based on these tentative results the conclusion should not be to end the program. We rather echo the recommendation of a recent growth monitoring and promotion review article: “Where growth monitoring and promotion programs currently exist and there is a potential for improvement, then maximize their potential, strengthen the nutrition counseling elements, combine growth monitoring with other health intervention . . . and ensure consistent message delivery.”

It is important to target younger children 0-24 months of age. Increased frequency of contact with health staff as a result of growth monitoring can be optimized to increase the utilization of preventive and curative health services. In addition, the AINM-C strategy included growth monitoring for community mobilization to address underlying socioeconomic and other causes of poor nutrition and health which still needs to be accomplished.

Implementing more intensive and integral preventive health and nutrition programs in indigenous, poor and excluded communities in Guatemala is also recommended.

These can include agricultural programs, animal raising and income generating activities, and renovated behavior change interventions and communication.

Finally, a month ago a conditional cash transfer program began to be implemented in Guatemala; however, no evaluation protocol has been put forward yet. Let this not be another missed opportunity to learn about the impact of social and economic interventions in the nutritional status and health of young children.

References