The Nepal
National Vitamin A Program

Elements of Success

Female Community Health Volunteer dosing a child with vitamin A

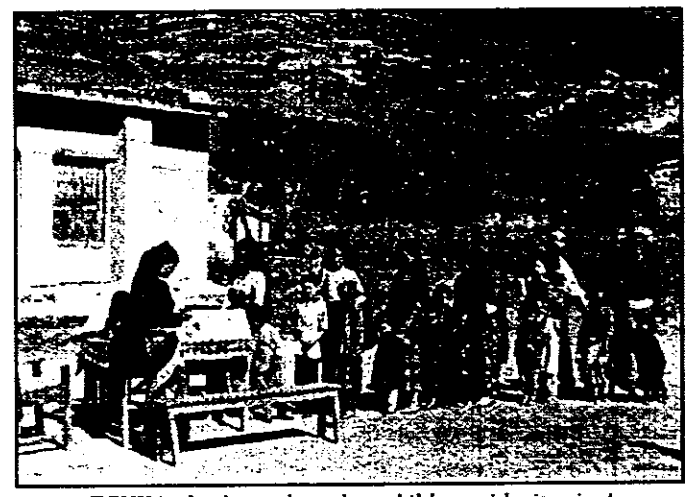
Ministry of Health **USAID** **UNICEF**

A

The Nepal National Vitamin A Program
Elements of Success

Introduction

Talphi is a village of about 300 people in Jumla district, Western Nepal. It is located at the upper altitude level for rice production, and most families subsist on millet, rice, lentils and occasional seasonal vegetables, mostly radish. Talphi is about five days walk to the nearest road head and a 6-8 hour walk from the district headquarters. There is a dirt airstrip in the district center, with periodic flights that are not affordable for the majority of the district's population, but which can be used for some government supply of essential medications and staple foods during shortage seasons. There is a health post about two hours walk from Talphi, but the supply of medicines is limited, and in the past there have been long periods when there were no trained staff available. Mortality rates in children are very high, and among other problems, severe vitamin A deficiency is well documented in the district, with an earlier survey showing 13.2% of under five year old children with xerophthalmia.[1] The government of Nepal is trying to reach *all* children with high-dose vitamin A supplements, including those living in remote villages like Talphi.



FCHV in Jumla ready to dose children with vitamin A

The government's National Vitamin A Program (NVAP) has as its objective, twice yearly supplementation of all children age 6-60 months of age, as a means to reduce vitamin A deficiency and thus have an impact on child mortality. Nutrition education is also provided to the parents to promote better dietary habits. The program began in 1993, initially covering the districts with the highest prevalence of vitamin A deficiency, expanding each year and now covering over half the country. Supplementation is done through distribution campaigns: one in the spring and one in the fall each year. The program is administered through the government health infrastructure, with capsules distributed to district health offices and on to health posts, and then through village health workers (VHWs) to female community health volunteers (FCHVs). FCHVs are unpaid local volunteers from each ward in the country trained by the Ministry of Health (MOH) to provide some basic health services to their communities. FCHVs work with their communities to distribute vitamin A supplements to the children in their villages.

The government receives substantial assistance in implementing the program from the Nepali Technical Assistance Group (NTAG), a local non-governmental organization whose assistance to the NVAP is funded by the United States Agency for International Development (USAID). NTAG initiates the program in new districts by providing training, logistic support for capsule distribution before the campaigns, assistance with health education and promotional activities, support for FCHVs, and field supervision for all program activities. In addition, NTAG manages program monitoring, which includes completing district level mini-surveys that provide accurate coverage estimates. NTAG supports new districts for the first two distribution rounds

and then turns the program over to the district health staff, providing further assistance when requested, or in response to emergency situations. Capsules and IEC materials are provided by UNICEF.

And the program *is* extraordinarily successful. Over 80% of children in villages like Talphi have received high dose vitamin A capsules twice each year[2], a coverage estimate maintained in district after district included in the National Vitamin A Program. Among those dosed, mortality is likely to be reduced by up to 30%[3],[4]. In a country with infrastructure weaknesses, where 90 percent of the people live in rural areas, often in difficult terrain, where most delivery systems face serious constraints and where routine immunization coverage in children is low, achieving district coverage estimates over 80% is unprecedented, making the Nepal vitamin A supplement program arguably the best in the world.

The obstacles that had to be overcome to achieve this high coverage were enormous. Capsules had to be supplied to the district headquarters from the capital, Kathmandu, requiring UNICEF-assisted procurement from outside Nepal. Districts had to request supplies from central government stores; get clearance and response, and capsules had to be shipped by road or air, often complicated by canceled flights due to airplane repair and bad weather. Finally, capsules had to be distributed from the district center to health posts, some of which are two days walk or more from the center. Capsules then had to be distributed from health posts to female community health volunteers in time for the date of the distribution campaign. All levels of personnel involved in the program implementation had to be trained to ensure that they knew not only the importance of vitamin A but how the program worked and their role in making it successful.

The public had to be sensitized both to the importance of vitamin A and to the distribution campaign. Promotional activities needed to be strong enough and done widely enough to ensure that caretakers would bring their children to the FCHVs to receive the capsules during the campaign, not once but twice each year. All the details for dosing each child and recording the doses given needed to be completed, and the whole process needed to be closely monitored.

All these things *were* accomplished, not just in Jumla, but since 1993, in 53 of Nepal's 75 districts, with five new districts added each distribution round. And high coverage was not *only* achieved in Jumla: based on results of 6-10 district level representative mini-surveys completed following each distribution round, coverage is consistently well over 80% for new districts *and* for districts now completing their 10th distribution round. Coverage remains high even after program support activities have been adopted as routine Ministry of Health activities with limited external input.

And the question is "why?" What elements of this program have allowed for such success, sustained since 1993, expanded to more than half the country and likely to cover all districts within the next three years. Understanding the elements of success, in a country with such geographic and infrastructure constraints as Nepal should be helpful for capsule programs just beginning in other countries. This summary includes details on program achievements and attempts to describe some of the elements of the extraordinary success of this program.

How has it happened? Highlights of accomplishments to date

The campaign strategy

Utilization of health post services is limited in Nepal, with less than 10% of deliveries done at a health facility, and less than 20% of caretakers taking their child to a health facility for an illness such as diarrhea or pneumonia.[5] Since high-dose supplementation requires twice yearly dosing, trying to assure continuous availability at health posts and generating adequate demand to change health facility use patterns would likely require many years to achieve. Thus to achieve high coverage for supplementation with vitamin A, an alternative strategy was necessary. A campaign approach was decided upon, selecting the same dates in the spring and fall each year and putting a great deal of staff time into training, promotion and support immediately before each distribution round. The program thus focuses on ensuring capsule availability at the districts, providing training and refresher programs to motivate district, health post and community level staff to make the distribution successful, and on promotional activities both nationally and locally to ensure that caretakers know the distribution dates. Within a few years, the distribution rounds become routine, with the program providing emergency assistance, the district staff ensuring that capsules are available and helping with local promotional activities, and with caretakers becoming used to taking their children to receive the capsule. This campaign approach has been successful in other health interventions, including most recently the National Immunization Days to improve polio immunization coverage. The success in the Nepal Vitamin A program suggests that there may be other interventions that would benefit from such an approach.

The community-based approach and FCHVs

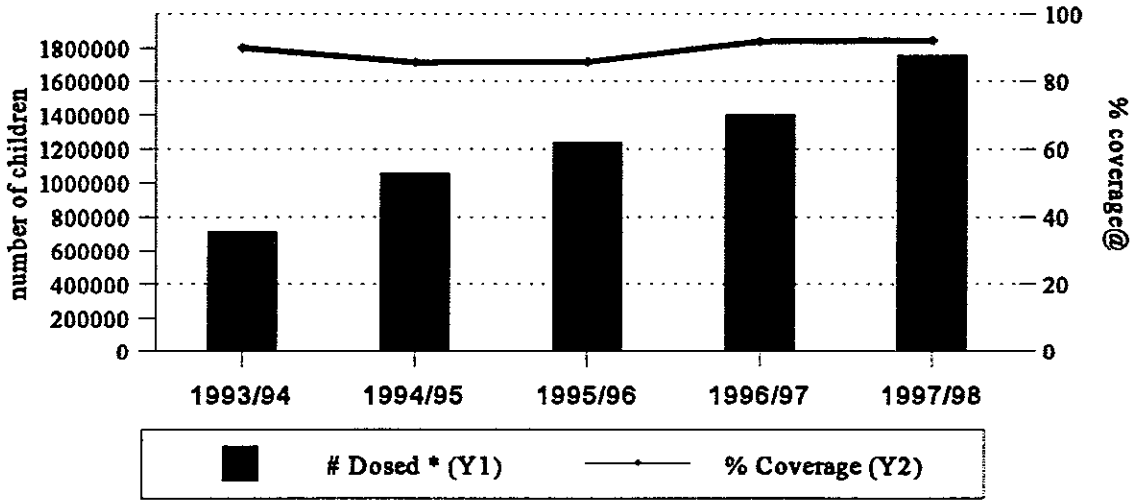
Even with a campaign approach, the program needed to be brought down to the community level, making access to the distribution as easy as possible for caretakers and their children. To bring this service close to the people, female community health volunteers carry out the distribution. To accomplish this, many obstacles had to be overcome. There had to be a government policy established to allow these often illiterate village workers to distribute the high-dose capsule, perceived by many in the medical community as a drug only to be distributed by medical personnel. A training program was required to teach FCHVs about dosing, about keeping a record of children dosed, and helping them understand the importance of vitamin A in the diet so they could teach this to their villagers. These unpaid workers needed to be motivated to promote the campaign and follow up on children not coming to them for the capsules during the campaign. District health staff, community political leaders, teachers and other community members needed orientation, so that they could assist the FCHVs. And as much as anything, there needed to be trust in communities so caretakers of children needing capsules understood the importance of vitamin A, knew where to go to get the capsules during the campaigns and trusted that the service would be available.

These obstacles also were overcome. For all new districts, the program supports training for FCHVs in addition to their semiannual review meetings. Prior to the first and second distribution rounds in a new district, the FCHVs receive training on the importance of A, essential nutrition education messages and practical training on how to conduct the distribution rounds. These

trainings also orient the MOH district and health facility staff to the National Vitamin A Program. During the trainings, FCHVs receive the vitamin A capsules needed for the upcoming distribution, along with education materials, scissors (to cut the capsule so the liquid can be squeezed directly into the child's mouth) and registers to record the children dosed. After two rounds of distribution have been completed, NTAG no longer supports direct preparation for the upcoming campaigns and the MOH staff utilize the regular semiannual FCHV review meetings to provide capsules to the FCHVs and to conduct refresher training as needed. On occasions when the review meetings were delayed (usually due to late release of the budget), FCHVs and district staff have found alternative ways to ensure that all FCHVs have adequate capsules. Over the past few years, in interviews with hundreds of FCHVs, only a small percentage have not had adequate capsules.

In October 1998, a total of 25,011 FCHVs distributed high-dose vitamin A capsules to children from 6-60 months old in their communities. Through this effort an estimated total of 2.1 million children were protected, well over half of Nepal's children in this age group. Figure 1 shows the total number of children reached each year based on census data and coverage statistics for districts in the program through April 1998.

Figure 1: Children receiving vitamin A capsules by year and estimated coverage for districts in program

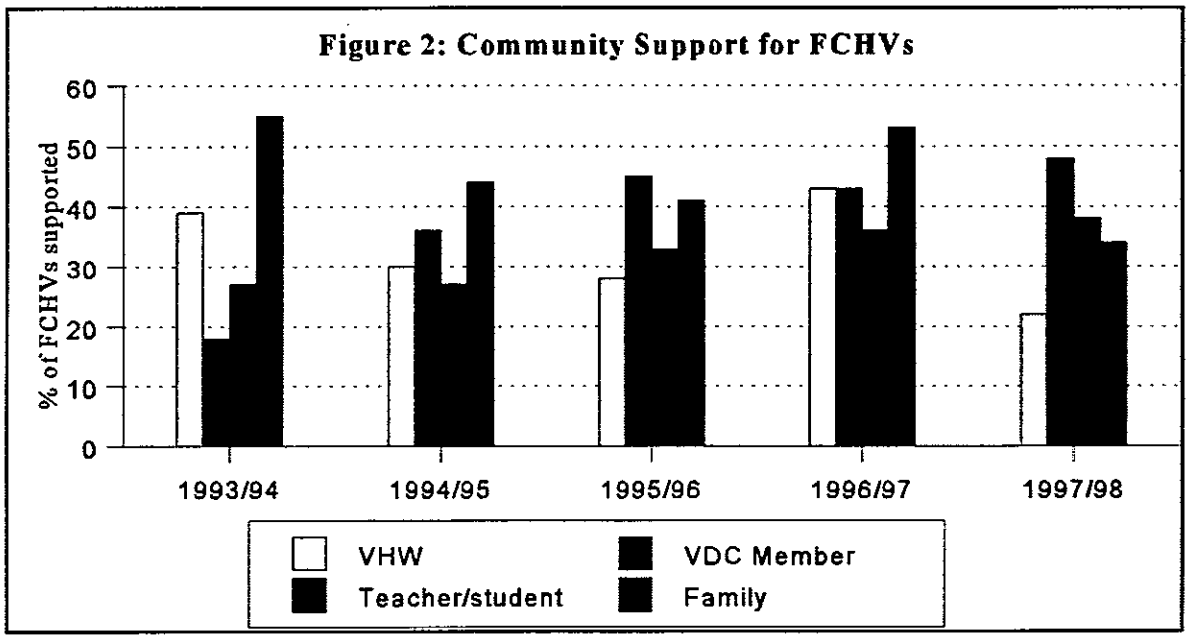


** Data reflect distribution only through April 1998. At the end of the most recent distribution round in October 1998, it is estimated that over two million children were dosed.*
@ In program districts.

The program adds 5-6 new districts with each distribution round and hopes to cover all 75 districts by the end of 2001 if not earlier. If so, Nepal may be one of the few countries in the world to eliminate vitamin A deficiency by the year 2001, fulfilling the goal set in the World Summit for Children in 1990.

What motivates FCHVs to continue with their work is not fully clear, as they often work in relative isolation. While the program provides substantial support, clearly not all of the nation's 46,000 FCHVs receive personal attention each year. District health facilities are overextended,

and assistance from village health workers varies from place to place. Distribution is usually done at a central location within the ward (FCHV catchment area) on the first day of the campaign. This requires mothers, older siblings or other caretakers to walk, often several hours, to the site for their children to receive the capsule. FCHVs and others promote the campaign ahead of time, but there must be enough community motivation for families to actively seek the service. The majority of children are dosed on the first day. Yet FCHVs will try to locate all remaining children through house-to-house visits. Communities must perceive some value in the campaign and transmit that sense to FCHVs, who subsequently see their work as important for their communities. Furthermore, there is growing recognition among community workers and political leaders that the program is important for the health of their children, and support increases each year. This is highlighted in the green bars in Figure 2 below. Figure 2 shows the mix of community support over several years, as measured by direct assistance during the campaigns, provision of snacks or money in support of FCHVs.



In a similar community-based project in Jumla district where community workers treated pneumonia, community perception of improvement in child health and reduction in pneumonia came well before program data could demonstrate the reduction.[6] Although there are currently no data measuring community perception, such might well be the case with this program.

Promotion and mobilization

Another element of success in the Nepal program is the effort in promotion and mobilization. Promotional efforts have been both national and local, serving not only to advertise the supplementation campaign but also to build awareness about the importance of vitamin A and the dietary measures that can improve vitamin A status. NTAG develops educational messages for radio, television and for informational pamphlets. These are broadcast or distributed intensively immediately before each distribution round. In addition, NTAG works with district offices, NGOs and others to support local promotional activities that include magic shows,

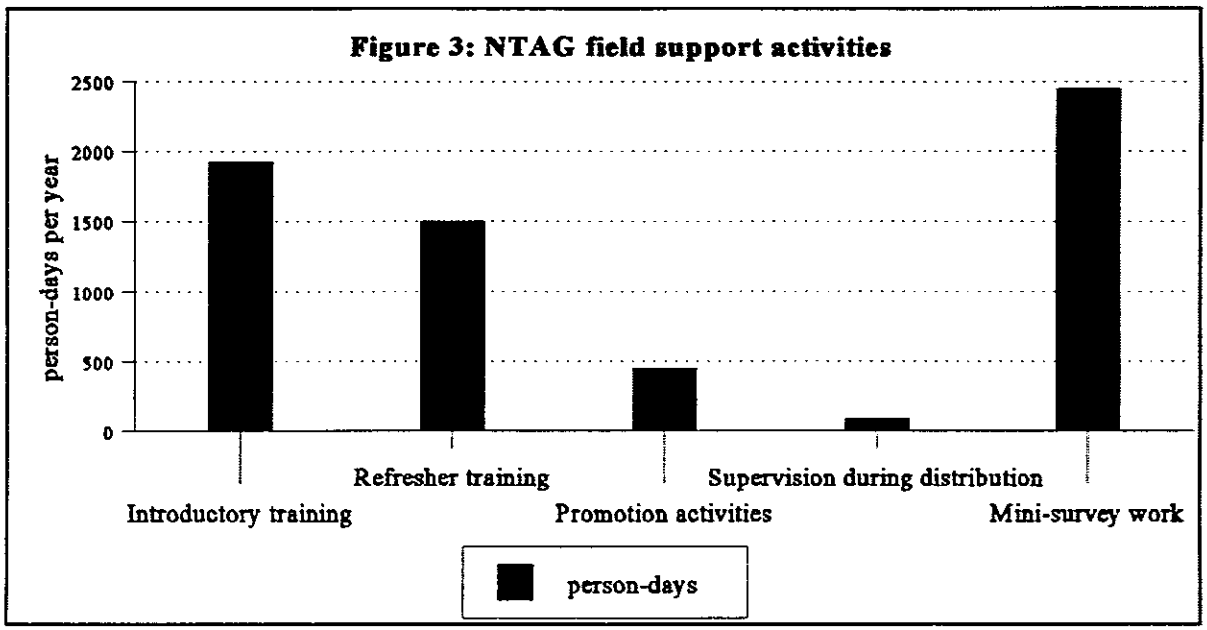
parades, theater performances and other activities reiterating the importance of vitamin A, the need for supplementation, and the benefit to improved dietary habits. Particularly in the Terai region, there has been overwhelming community participation in these events, with schools, police, local businesses all mobilized. These activities, combined with the promotion done by the FCHVs, have made it rare to find a mother not taking advantage of the supplement effort, with most understanding the importance of dietary vitamin A.

Support for the program

A wise person once said that a successful leader left his constituency saying that they had accomplished the task by themselves. It is difficult to ensure that a program meets its goals, and classic supervision is often directive, focusing on failings and deficiencies. An alternative model tries to build on each individual's strengths, compliments and thanks them for their accomplishments, and supports them in finding ways to maneuver around obstacles. It is this model that the Nepali Technical Assistance Group has adopted.

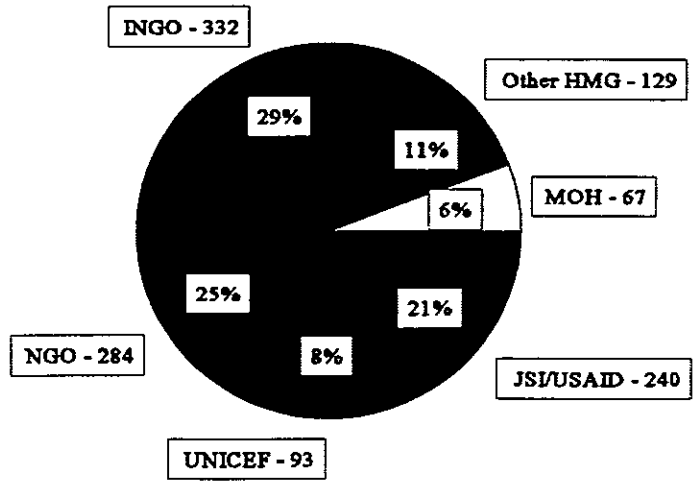
NTAG is a Nepali non-governmental organization (NGO) that has been given responsibility to support the Ministry of Health Vitamin A program. Supported primarily by USAID through a contract with John Snow, Incorporated (JSI), with additional support from UNICEF, NTAG provides a variety of services to help the MOH implement the program. These services include assistance with logistics and capsule supply, support for training, assistance with promotion and education efforts, and monitoring program accomplishments. Woven throughout these activities is the concept of support: support before the campaign; support during crises such as sudden staffing changes or capsule shortages; support during monitoring activities; and support for FCHVs.

An extraordinary amount of time is spent in the field for these support activities. Figure 3 reflects the amount of time spent by NTAG staff in the field over the course of a year.



In addition, NTAG has solicited additional field support from a wide variety of other agencies, including UNICEF, USAID, the Government of Nepal, JSI, and a number of NGOs. As a reflection of this support, Figure 4 shows the number of sites monitored by various organizations during capsule distribution in October 1998.

Figure 4: Number of distribution sites monitored, by organization--Oct. 1998



Every opportunity is taken to support those implementing the program. Hence, during the extensive mini-surveys that follow each distribution, survey staff meet with FCHVs and health post staff to discuss constraints and provide encouragement. In 1997/98 during the mini-surveys conducted in 13 districts, a total of 377 wards were visited, providing support to most of the 377 FCHVs in those wards.

This extensive field support, which has continued now through five years of program implementation, appears to be a critical element in the program's success.

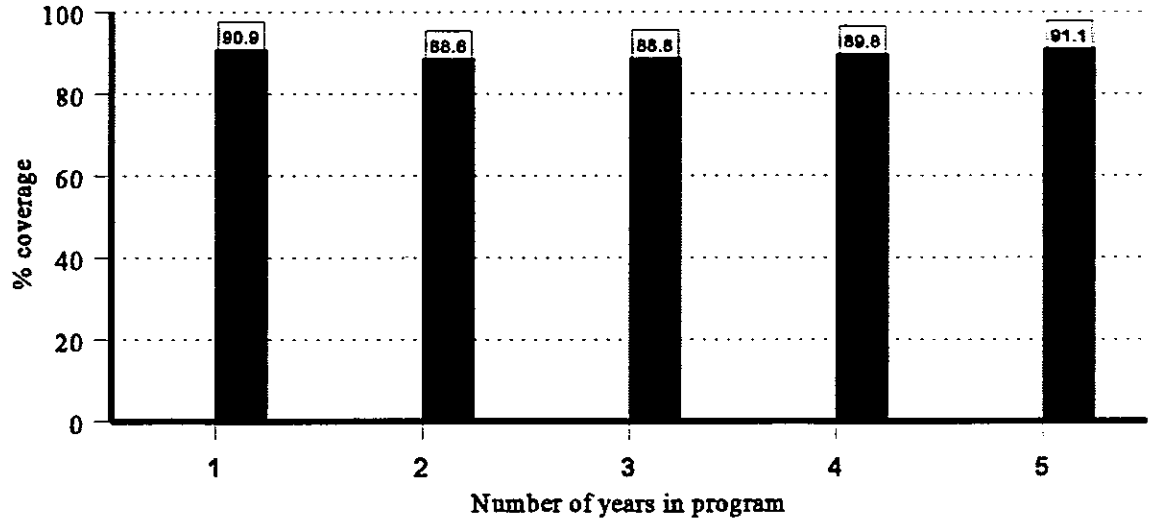
Program monitoring: mini-surveys and measuring coverage

In 1998, an extensive micronutrient survey was completed, with assistance from UNICEF and the Micronutrient Initiative. This survey collected data on iodine, vitamin A and iron, providing household data stratified by development region (Eastern, Central, Western, Mid-Western, Far Western) and ecologic zone (mountain, middle hill and Terai). Preliminary results suggest that coverage for all areas covered by the program is in excess of 84%. This survey has importance well beyond the coverage figures provided.

In Nepal, there was some skepticism about the coverage figures reported by NTAG: could the implementing agency be objective in assessing its own program? The National Micronutrient Survey has solidified the partnership between all those involved with the program at the national level by fostering collaboration to validate the accomplishments of the program to date. Now there is a strong sense of teamwork among staff from ministries, donor agencies, NGOs and others working together to complete the program in all districts and ensure that it continues for the next 5-10 years.

Second, by validating the coverage results, the survey has also validated the methods used by NTAG. Figure 5 shows the average coverage for districts included in the program through 1997/98 by number of years in the program as measured by NTAG district surveys.

Figure 5: Average coverage by number of years in program



Immediately following each distribution round, NTAG makes a random selection of districts from each phase of the program (that is, by time of entry). For each district selected, population proportionate sampling is done to select 25 wards in each of which 7 randomly selected households will be visited. This sampling method, similar to Expanded Program on Immunization (EPI) survey sampling, provides representative data at the district level. An algorithm was developed and tested to determine whether a randomly selected child between 6 and 60 months old had received a vitamin A capsule during the last distribution round. This algorithm was used for the National Micronutrient Survey and is now the standard algorithm that should be used for all surveys attempting to determine capsule consumption during the campaigns.

NTAG provides a 2-day training in Kathmandu for the survey teams. The training includes orientation and field work around Kathmandu valley. Teams then go to the selected district headquarters, and a second part of the training is completed with the district statistical assistant. This too involves field practice. The team is then divided, a lottery distributes the selected wards among team members, and the survey begins. Each district survey costs approximately $2500, and most districts are completed within 5-7 days, depending on size and terrain. Beginning in 1997, additional questions concerning pneumonia and diarrheal disease (ARI/CDD) program issues were added to test the concept of expanding the usefulness of the mini-surveys. In the future, selected districts will be asked if there are questions that they would like addressed, and these may be added. The mini-survey method, thus validated, may be a manageable district tool to assess a variety of health variables.

Conclusions

In summary, the Nepal Vitamin A Program has achieved a level of success that would not have been thought possible 10 years ago. The campaign approach, community involvement and dedication of the FCHVs, the promotional activities, the extensive field support by a local technical assistance group, and the success of the mini-surveys in confirming coverage, *all* contribute to this success. The fact that coverage has remained high following full adoption of program activities by the government district health staff reflects a level of commitment that suggests the program can be sustained. The trust built with FCHVs and between FCHVs and their communities offers a mechanism to address longer term issues related to dietary improvement, broadening the nutrition impact beyond vitamin A. The combination of field support and mini-survey monitoring offers the opportunity to assess other problems and to build better capacity at the district level to manage health activities. All districts in Nepal are expected to be covered by 2001. If current coverage levels can be maintained, the impact on child mortality will be huge.

References:

1) Daulaire NMP, Starbuck ES, Houston RM, Church MS, Stukel TA, Pandey MR. Childhood mortality after a high dose of vitamin A in a high risk population. *Br Med J.* 1992; 304:207-210.

2) Survey of vitamin A capsule distribution in Karnali Zone, New Era, Kathmandu, Nepal, 1997.

3) Beaton GH, Martorell R, Aronson KJ, et al. Effectiveness of vitamin A supplementation in the control of young child morbidity and mortality in developing countries. ACC/SCN State-of-the-Art Series, Nutrition Policy Discussion Paper no. 13. Geneva: World Health Organization, 1993.

4) West KP Jr, Pokhrel RP, Katz J, LeClerq SC, Khatry SK, Shrestha SR, Pradhan EK, Tielsch JM, Pandey MR, Sommer A. Efficacy of vitamin A in reducing preschool child mortality in Nepal. Lancet 1991; 338:67-71.

5) Pradan A, Aryal RH, Regmi G, Ban B, and Govindasamy P, Nepal Family Health Survey, Family Health Division, MOH; New Era; Macro International, Kathmandu, Nepal, 1996. (Part of USAID funded Demographic and Health Surveys)

6) Pandey MR, Daulaire NMP, Starbuck ES, Houston RM, McPherson K. Reduction in total under five mortality in western Nepal through community-based antimicrobial treatment of pneumonia. Lancet 1991: 338:993-7